

UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

IN RE: AQUEOUS FILM-FORMING
FOAMS PRODUCTS LIABILITY
LITIGATION

MDL No. 2873

COMMISSIONERS OF PUBLIC WORKS
FOR THE CITY OF CHARLESTON d/b/a
CHARLESTON WATER SYSTEM,
Individually and on Behalf of All Others
Similarly Situated,

Plaintiff,

vs.

THE 3M COMPANY, f/k/a Minnesota Mining
and Manufacturing Co., AGC CHEMICALS
AMERICAS INC., AMEREX
CORPORATION, ARCHROMA U.S., INC.,
ARKEMA INC., BASF CORPORATION,
individually and as successor in interest to Ciba
Inc., BUCKEYE FIRE EQUIPMENT
COMPANY, CARRIER GLOBAL
CORPORATION, CHEMDESIGN
PRODUCTS INC., CHEMGUARD, INC.,
CHEMICALS, INC., THE CHEMOURS
COMPANY, individually and as successor in
interest to DuPont Chemical Solutions
Enterprise, THE CHEMOURS COMPANY
FC, LLC, individually and as successor in
interest to DuPont Chemical Solutions
Enterprise, CLARIANT CORPORATION,
individually and as successor in interest to
Sandoz Chemical Corporation, CORTEVA,
INC., individually and as successor in interest
to DuPont Chemical Solutions Enterprise,
DEEPWATER CHEMICALS, INC., DUPONT

Civil Action No. 2:23-cv-01075-RMG

CLASS ACTION COMPLAINT AND
DEMAND FOR JURY TRIAL

DE NEMOURS INC., individually and as)
successor in interest to DuPont Chemical)
Solutions Enterprise, DYNAX)
CORPORATION, E. I. DU PONT DE)
NEMOURS AND COMPANY, individually)
and as successor in interest to DuPont)
Chemical Solutions Enterprise, KIDDE-)
FENWAL, INC., individually and as successor)
in interest to Kidde Fire Fighting, Inc.,)
NATION FORD CHEMICAL COMPANY,)
NATIONAL FOAM, INC., TYCO FIRE)
PRODUCTS, LP, individually and as successor)
in interest to The Ansul Company, and JOHN)
DOE DEFENDANTS 1-20,)

Defendants.)

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. JURISDICTION AND VENUE	5
III. PARTIES	5
A. Plaintiff	5
B. Defendants	6
1. The AFFF Defendants.....	6
2. The Fluorosurfactant Defendants.....	10
3. The PFC Defendants	14
4. Doe Defendants 1-20	17
IV. FACTUAL ALLEGATIONS RELEVANT TO ALL CAUSES OF ACTION.....	18
A. PFOA and PFOS Pose Risks to the Environment and Public Health	18
B. Defendants’ Manufacture and Sale of AFFF/Component Products	19
C. Defendants’ Knowledge of the Threats to Public Health and the Environment Posed by PFOS and PFOA	21
1. 1940s -1950s: 3M, DuPont, and the Development of a Toxic Chemical Family	21
2. 1960s: AFFF’s Environmental Hazards Come Into Focus	24
3. 1970s - 1980s: Defendants’ Deepening Knowledge of the Risks of PFOA and PFOS	26
4. 1990s - 2000s: With 3M and DuPont Under Scrutiny, the AFFF Market Is Forced to Respond.....	32
5. 2000s: Formation of the Fire Fighting Foam Coalition	34
D. The Scientific Community Discovers the Impact of PFOS and PFOA on the Environment and Human Health.....	36

E.	Federal, State, and Internal Governmental Agencies Call for Monitoring and Cleanup of PFAS Contamination.....	38
F.	AFFF Containing PFOS and PFOA Is Fungible and Commingled in the Surface/Ground Water	45
V.	ADDITIONAL ALLEGATIONS ON MARKET SHARE LIABILITY, ALTERNATIVE LIABILITY, CONCERT OF ACTION, AND ENTERPRISE LIABILITY.....	45
VI.	EQUITABLE TOLLING OF APPLICABLE STATUTE OF LIMITATIONS.....	46
VII.	ADDITIONAL ALLEGATIONS SUPPORTING PUNITIVE DAMAGES	47
VIII.	CLASS ACTION ALLEGATIONS	48
A.	Numerosity.....	49
B.	Commonality and Predominance.....	49
C.	Typicality	51
D.	Adequacy	51
E.	Superiority.....	51
F.	Injunctive and Declaratory Relief.....	52
G.	Issue Certification	52
IX.	CAUSES OF ACTION.....	53
	COUNT I - DEFECTIVE DESIGN.....	53
	COUNT II - FAILURE TO WARN	56
	COUNT III - NEGLIGENCE	58
	COUNT IV - PUBLIC NUISANCE.....	62
	COUNT V - PRIVATE NUISANCE	64
	COUNT VI - TRESPASS.....	66
	PRAYER FOR RELIEF	67
	DEMAND FOR JURY TRIAL	68

Plaintiff COMMISSIONERS OF PUBLIC WORKS FOR THE CITY OF CHARLESTON d/b/a CHARLESTON WATER SYSTEM (“Plaintiff” or “CWS”), individually and on behalf of all others similarly situated, by and through its undersigned counsel, hereby files this Complaint against Defendants, THE 3M COMPANY, f/k/a Minnesota Mining and Manufacturing Co., AGC CHEMICALS AMERICAS INC., AMEREX CORPORATION, ARCHROMA U.S., INC., ARKEMA INC., BASF CORPORATION, individually and as successor in interest to Ciba Inc., BUCKEYE FIRE EQUIPMENT COMPANY, CARRIER GLOBAL CORPORATION, CHEMDESIGN PRODUCTS INC., CHEMGUARD, INC., CHEMICALS, INC., THE CHEMOURS COMPANY, individually and as successor in interest to DuPont Chemical Solutions Enterprise, THE CHEMOURS COMPANY FC, LLC, individually and as successor in interest to DuPont Chemical Solutions Enterprise, CLARIANT CORPORATION, individually and as successor in interest to Sandoz Chemical Corporation, CORTEVA, INC., individually and as successor in interest to DuPont Chemical Solutions Enterprise, DEEPWATER CHEMICALS, INC., DUPONT DE NEMOURS INC., individually and as successor in interest to DuPont Chemical Solutions Enterprise, DYNAX CORPORATION, E. I. DU PONT DE NEMOURS AND COMPANY, individually and as successor in interest to DuPont Chemical Solutions Enterprise, KIDDE-FENWAL, INC., individually and as successor in interest to Kidde Fire Fighting, Inc., NATION FORD CHEMICAL COMPANY, NATIONAL FOAM, INC., TYCO FIRE PRODUCTS, LP, individually and as successor in interest to The Ansul Company, and JOHN DOE DEFENDANTS 1-20, fictitious names whose present identities are unknown (collectively “Defendants”) and alleges, upon information and belief, as follows:

I. INTRODUCTION

1. This action arises from the foreseeable contamination of wastewater by the use of aqueous film-forming foam (“AFFF”) products that contained per- and poly-fluoroalkyl

substances (“PFAS”), including perfluorooctane sulfonate (“PFOS”) and perfluorooctanoic acid (“PFOA”).

2. PFOS and PFOA are fluorosurfactants that repel oil, grease, and water. PFOS, PFOA, and/or their chemical precursors, are or were components of AFFF products, which are firefighting suppressant agents used in training and firefighting activities for fighting Class B fires. Class B fires include fires involving hydrocarbon fuels such as petroleum or other flammable liquids.

3. PFOS and PFOA are mobile, persist indefinitely in the environment, bioaccumulate in individual organisms and humans, and biomagnify up the food chain. In other words, they are “forever chemicals.”

4. PFOS and PFOA are also associated with multiple and significant adverse health effects in humans, including, but not limited to kidney cancer, testicular cancer, high cholesterol, thyroid disease, ulcerative colitis, and pregnancy-induced hypertension.

5. At various times from the 1960s through today, Defendants designed, manufactured, marketed, distributed, and/or sold: (a) AFFF products containing PFOS, PFOA, and/or their chemical precursors; (b) fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF; and/or (c) perfluorinated chemicals (“PFCs”) containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF (collectively, “AFFF/Component Products”).

6. Defendants designed, manufactured, marketed, distributed, and/or sold AFFF/Component Products despite knowing that PFAS are toxic, persist indefinitely, and would be routinely released into the environment during fire protection, training, and response activities, even when used as directed and intended by Defendants.

7. Since its creation in the 1960s, AFFF designed, manufactured, marketed, distributed, and/or sold by Defendants, and/or that contained fluorosurfactants and/or PFCs designed, manufactured, marketed, distributed, and/or sold by Defendants, have been released into the environment during fire protection, training, and response activities, resulting in widespread PFAS contamination.

8. Plaintiff is a publicly owned treatment works (“POTW”), which provides both wastewater and drinking water services to Charleston, Berkeley, and Dorchester counties.

9. For purposes of this Complaint, Plaintiff and Class members are defined as POTWs that provide water services and which have had their wastewater, biosolids¹, and related products, such as reuse water, contaminated by PFAS.

10. Defendants’ AFFF/Component Products containing PFOA and PFOS in unchanged form were discharged into the environment, thus contaminating the surface and ground water supply from which Plaintiff and other similarly situated Class members draw water to provide public drinking water. After use by the public, that water is discharged into Plaintiff’s and Class members’ wastewater systems. Such PFAS chemicals contaminated Plaintiff’s and other similarly situated Class members’ wastewater and biosolids.

11. On information and belief, the contamination is a direct and proximate result of Defendants’ AFFF/Component Products, which resulted in the foreseeable migration of PFAS to Plaintiff and other Class members, and discharges/residual products that result from those treatment processes. This migration occurred from both the contaminated drinking water

¹ Biosolids are a product of the wastewater treatment process, created during wastewater treatment where the liquids are separated from the solids, then treated physically and chemically to produce a semisolid, nutrient-rich product known as biosolids.

discharged into the sewer system as well as the PFAS contributions from both domestic and non-domestic users of Plaintiff and other Class members.

12. In order to ensure that they can process wastewater and biosolids in a manner that complies with regulatory requirements, Plaintiff and other Class members have taken and will have to continue to take action to: (a) minimize the presence of PFAS chemicals in their sewer systems, and (b) address and remediate the contamination of wastewater, biosolids, and treatment plants caused by the Defendants.

13. As such, Plaintiff and other Class members have incurred damages and face the imminent, certainly impending, and substantially heightened risk of harm related to future expenses in the investigation, testing, sampling, monitoring, assessing, reducing, and reporting of PFAS (contained in Defendants' AFFF/Component Products) that have contaminated Plaintiff and other Class members' wastewater, biosolids, other residual products (such as reuse water), and treatment facilities.

14. Moreover, Plaintiff and all other POTWs similarly situated are now or will face the imminent, certainly impending, and substantially heightened risk of harm of future expenses related to the design, construction, modification, operation, and maintenance of systems to treat and reduce and/or eliminate PFAS (contained in Defendants' AFFF/Component Products) that have contaminated Plaintiff and other Class members' wastewater, biosolids, other residuals (such as reuse water), and treatment facilities.

15. In addition, Plaintiff and all other POTWs similarly situated are now or will face the imminent, certainly impending, and substantially heightened risk of harm related to future expenses for obtaining new water sources, restrictions and/or loss of opportunities to reuse wastewater, as well as increased costs and/or restrictions on the reuse/marketing of biosolids,

and/or extending or modifying of the existing wastewater distribution system due to PFAS contamination from Defendants' AFFF/Component Products.

II. JURISDICTION AND VENUE

16. This Court has subject-matter jurisdiction under the Class Action Fairness Act, 28 U.S.C. §1332(d)(2), because: (a) there are at least 100 putative Class members; (b) minimal diversity exists because Plaintiff and members of the proposed Class are citizens of different states than at least one Defendant; and (c) the aggregate amount in controversy exceeds \$5,000,000, exclusive of interest and costs.

17. This Court has personal jurisdiction over each Defendant because they each marketed, distributed, and/or sold AFFF/Component Products, and otherwise conducted extensive business within this District. Upon information and belief, each Defendant is a corporation or other business that has sufficient minimum contacts in South Carolina or otherwise intentionally avails itself of the South Carolina market, so as to render the exercise of jurisdiction over it by this Court consistent with traditional notions of fair play and substantial justice.

18. Venue is proper in this District under 28 U.S.C. §1391(a) because a substantial part of the events or omissions giving rise to Plaintiff's claims occurred in this District.

III. PARTIES

A. Plaintiff

19. Plaintiff brings this action on behalf of itself as well as all other POTWs that have detectable amounts of PFOA and/or PFOS from AFFF/Component Products.

20. Plaintiff Commissioners of Public Works for the City of Charleston, South Carolina, d/b/a Charleston Water System, is a municipal utility, formed in 1917 according to South Carolina Code §5-31-210 *et seq.*, with its principal place of business located at 539 Harbor View Circle, Charleston, South Carolina 29412.

21. CWS's main wastewater treatment facility is Plum Island Wastewater Treatment Plant ("Plum Island").

22. CWS provides wastewater services to approximately 180,000 customers and 61,000 accounts, through 884 miles of sewer collection mains, and 209 wastewater pump stations within Charleston, Berkley, and Dorchester counties.

23. CWS utilizes water sourced from the Edisto River and the Bushy Park Reservoir, received into the Charleston Harbor.

24. Plum Island has a permitted capacity of 36 million gallons per day, with an average daily flow of 25 million gallons per day.

25. CWS has conducted PFAS lab testing of its wastewater and biosolids. Influent and effluent sampling showed PFOA between 7-26 parts per trillion ("ppt") and PFOS between 10-24 ppt; biosolids tested contained PFOS between 7-22 ppt.

B. Defendants

1. The AFFF Defendants

26. The term "AFFF Defendants" refers collectively to Defendants The 3M Company, Amerex Corporation, Buckeye Fire Equipment Company, Carrier Global Corporation, Chemguard, Inc., Kidde-Fenwal, Inc., National Foam, Inc., and Tyco Fire Products LP.

27. Defendant The 3M Company f/k/a Minnesota Mining and Manufacturing Co. ("3M") is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business located at 3M Center, Saint Paul, Minnesota 55144-1000.

28. Beginning before 1970 and until at least 2002, 3M designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

29. Defendant Amerex Corporation (“Amerex”) is a corporation organized and existing under the laws of the State of Alabama, with its principal place of business located at 7595 Gadsden Highway, Trussville, Alabama 35173.

30. Amerex is a manufacturer of firefighting products. Beginning in 1971, it was a manufacturer of hand portable and wheeled extinguishers for commercial and industrial applications.

31. In 2011, Amerex acquired Solberg Scandinavian AS, one of the largest manufacturers of AFFF products in Europe.

32. On information and belief, beginning in 2011, Amerex designed, manufactured, marketed distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

33. Defendant Tyco Fire Products LP (“Tyco”) is a limited partnership organized under the laws of the State of Delaware, with its principal place of business located at One Stanton Street, Marinette, Wisconsin 54143-2542.

34. Tyco is the successor in interest of The Ansul Company (“Ansul”), having acquired Ansul in 1990.

35. Beginning in or around 1975, Ansul designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

36. After Tyco acquired Ansul in 1990, Tyco/Ansul continued to design, manufacture, market, distribute, and sell AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

37. Defendant Chemguard, Inc. (“Chemguard”) is a corporation organized under the laws of the State of Texas, with its principal place of business located at One Stanton Street, Marinette, Wisconsin 54143.

38. On information and belief, Chemguard designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

39. On information and belief, Chemguard was acquired by Tyco International Ltd. in 2011.

40. Defendant Buckeye Fire Equipment Company (“Buckeye”) is a corporation organized under the laws of the State of Ohio, with its principal place of business located at 110 Kings Road, Kings Mountain, North Carolina 28086.

41. On information and belief, Buckeye designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

42. Defendant National Foam, Inc. (“National Foam”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 141 Junny Road, Angier, North Carolina 27501.

43. Beginning in or around 1973, National Foam designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFAS, including, but not limited to, PFOA and PFOS.

44. On information and belief, National Foam currently manufactures the Angus brand of AFFF/Component Products and is a subsidiary of Angus International Safety Group, Ltd.

45. On information and belief, National Foam merged with Chubb Fire Ltd. to form Chubb National Foam, Inc. in or around 1988.

46. On information and belief, Chubb (defined below) is or has been composed of different subsidiaries and/or divisions, including but not limited to, Chubb Fire & Security Ltd., Chubb Security, PLC, Red Hawk Fire & Security, LLC, and/or Chubb National Foam, Inc. (collectively, “Chubb”).

47. On information and belief, Chubb was acquired by Williams Holdings in 1997.

48. On information and belief, Angus Fire Armour Corporation (“Angus Fire”) had previously been acquired by Williams Holdings in 1994.

49. On information and belief, Williams Holdings was demerged into Chubb and Kidde P.L.C. in or around 2000.

50. On information and belief, when Williams Holdings was demerged, Kidde P.L.C. became the successor in interest to National Foam System, Inc. and Angus Fire.

51. On information and belief, Kidde P.L.C. was acquired by United Technologies Corporation (“United Technologies”) in or around 2005.

52. On information and belief, Angus Fire and National Foam separated from United Technologies in or around 2013.

53. Defendant Kidde-Fenwal, Inc. (“Kidde-Fenwal”) is a corporation organized under the laws of the State of Delaware, with its principal place of business at One Financial Plaza, Hartford, Connecticut 06101.

54. On information and belief, Kidde-Fenwal was an operating subsidiary of Kidde P.L.C. and manufactured AFFF/Component Products following Kidde P.L.C.’s acquisition by United Technologies.

55. On information and belief, Kidde-Fenwal is the entity that divested the AFFF business unit now operated by National Foam in 2013.

56. Defendant Carrier Global Corporation (“Carrier”) is a corporation organized under the laws of the State of Delaware, with its principal place of business at 13995 Pasteur Boulevard, Palm Beach Gardens, Florida 33418.

57. On information and belief, Carrier was formed in March 2020 when United Technologies spun off its fire and security businesses, before it merged with Raytheon Company in April 2020.

58. On information and belief, Kidde-Fenwal became a subsidiary of Carrier when United Technologies Corporation spun off its fire and security business in March 2020.

59. On information and belief, the AFFF Defendants designed, manufactured, marketed, distributed, and sold AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors, that were stored, handled, used, tested, otherwise discharged, and/or disposed at CWS.

2. The Fluorosurfactant Defendants

60. The term “Fluorosurfactant Defendants” refers collectively to Defendants 3M, Arkema Inc., BASF Corporation, ChemDesign Products Inc., Chemguard Inc., Deepwater Chemicals, Inc., E. I. du Pont de Nemours and Company, The Chemours Company, The Chemours Company FC, LLC, DuPont de Nemours, Inc., Corteva, Inc., and Dynax Corporation.

61. Defendant Arkema Inc. (“Arkema”) is a corporation organized and existing under the laws of Pennsylvania, with its principal place of business at 900 First Avenue, King of Prussia, Pennsylvania 19406.

62. Arkema develops specialty chemicals and polymers.

63. Arkema is an operating subsidiary of Arkema France, S.A.

64. On information and belief, Arkema designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

65. Defendant BASF Corporation (“BASF”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 100 Park Avenue, Florham Park, New Jersey 07932.

66. On information and belief, BASF is the successor-in-interest to Ciba. Inc. (f/k/a Ciba Specialty Chemicals Corporation).

67. On information and belief, Ciba Inc. designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

68. Defendant ChemDesign Products Inc. (“ChemDesign”) is a corporation organized under the laws of Delaware, with its principal place of business located at 2 Stanton Street, Marinette, Wisconsin 54143.

69. On information and belief, ChemDesign designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

70. Defendant Deepwater Chemicals, Inc. (“Deepwater”) is a corporation organized under the laws of Delaware, with its principal place of business located at 196122 E. County Road 40, Woodward, Oklahoma 73801.

71. On information and belief, Deepwater designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

72. Defendant Dynax Corporation (“Dynax”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 103 Fairview Park Drive, Elmsford, New York 10523.

73. On information and belief, Dynax entered into the AFFF market on or about 1991 and quickly became a leading global producer of fluorosurfactants and fluorochemical stabilizers containing PFOS, PFOA, and/or their chemical precursors.

74. On information and belief, Dynax designed, manufactured, marketed, distributed, and sold fluorosurfactants and fluorochemical stabilizers containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

75. Defendant E.I. du Pont de Nemours & Company (“E.I. du Pont”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 974 Centre Road, Wilmington, Delaware 19805.

76. Defendant The Chemours Company (“Chemours Co.”) is a limited liability company organized under the laws of the State of Delaware, with its principal place of business located at 1007 Market Street, P.O. Box 2047, Wilmington, Delaware 19899.

77. In 2015, E.I. du Pont spun off its performance chemicals business to Chemours Co., along with vast environmental liabilities which Chemours Co. assumed, including those related to PFOS, PFOA, and fluorosurfactants. On information and belief, Chemours Co. has supplied fluorosurfactants containing PFOS and PFOA, and/or their chemical precursors to manufacturers of AFFF/Component Products.

78. On information and belief, Chemours Co. was incorporated as a subsidiary of E.I. du Pont as of April 30, 2015. From that time until July 2015, Chemours Co. was a wholly owned subsidiary of E.I. du Pont.

79. In July 2015, E.I. du Pont spun off Chemours Co. and transferred to Chemours Co. its “performance chemicals” business line, which includes its fluoroproducts business, distributing shares of Chemours Co. stock to E.I. du Pont stockholders, and Chemours Co. has since been an independent, publicly traded company.

80. Defendant The Chemours Company FC, LLC (“Chemours FC”) is a limited liability company organized under the laws of the State of Delaware, with its principal place of business located at 1007 Market Street, Wilmington, Delaware 19899.

81. Defendant Corteva, Inc. (“Corteva”) is a corporation organized and existing under the laws of Delaware, with its principal place of business at 974 Centre Road, Wilmington, Delaware 19805.

82. Defendant Dupont de Nemours, Inc. f/k/a DowDuPont, Inc. (“DowDuPont”) is a corporation organized and existing under the laws of Delaware, with its principal places of business at 974 Centre Road, Wilmington, Delaware 19805 and 2211 H.H. Dow Way, Midland, Michigan 48674.

83. On June 1, 2019, DowDuPont separated its agriculture business through the spin-off of Corteva.

84. Corteva was initially formed in February 2018. From that time until June 1, 2019, Corteva was a wholly owned subsidiary of DowDuPont.

85. On June 1, 2019, DowDuPont distributed to DowDuPont stockholders all issued and outstanding shares of Corteva common stock by way of a pro-rata dividend. Following that distribution, Corteva became the direct parent of E.I. du Pont.

86. Corteva holds certain DowDuPont assets and liabilities, including DowDuPont’s agriculture and nutritional businesses.

87. On June 1, 2019, DowDuPont, the surviving entity after the spin-off of Corteva and of another entity known as Dow, Inc., changed its name to DuPont de Nemours, Inc. (“New DuPont”). New DuPont retained assets in the specialty products business lines following the above-described spin-offs, as well as the balance of the financial assets and liabilities of E.I. du Pont not assumed by Corteva.

88. Defendants E.I. du Pont, Chemours Co., Chemours FC, Corteva, and New DuPont are collectively referred to as “DuPont.”

89. On information and belief, DuPont designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

90. On information and belief, 3M and Chemguard also designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products.

91. On information and belief, the Fluorosurfactant Defendants designed, manufactured, marketed, distributed, and sold fluorosurfactants containing PFOS, PFOA, and/or their chemical precursors for use in AFFF/Component Products, that were stored, handled, used, tested, otherwise discharged, and/or disposed at CWS.

3. The PFC Defendants

92. The term “PFC Defendants” refers collectively to Defendants 3M, AGC Chemicals Americas Inc., Archroma U.S., Inc., ChemDesign, Chemicals, Inc., Clariant Corporation, Deepwater, E.I. du Pont, Chemours Co., Chemours FC, Corteva, New DuPont, and Nation Ford Chemical Co.

93. Defendant AGC Chemicals Americas, Inc. (“AGC”) is a corporation organized and existing under the laws of Delaware, having its principal place of business at 55 East Uwchlan

Avenue, Suite 201, Exton, Pennsylvania 19341.

94. On information and belief, AGC was formed in 2004 and is a subsidiary of AGC Inc., a foreign corporation organized under the laws of Japan, with its principal place of business in Tokyo, Japan.

95. AGC manufactures specialty chemicals. It offers glass, electronic displays, and chemical products, including resins, water and oil repellants, greenhouse films, silica additives, and various fluorointermediates.

96. On information and belief, AGC designed, manufactured, marketed, distributed, and sold PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

97. Defendant Archroma U.S., Inc. (“Archroma”) is a corporation organized and existing under the laws of Delaware, with its principal place of business at 5435 77 Center Drive, Charlotte, North Carolina 28217.

98. On information and belief, Archroma was formed in 2013 when Clariant Corporation divested its textile chemicals, paper specialties, and emulsions business to SK Capital Partners.

99. On information and belief, Archroma designed, manufactured, marketed, distributed, and sold PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

100. Defendant Chemicals, Inc. is a corporation organized and existing under the laws of Texas, with its principal place of business located at 12321 Hatcherville, Baytown, Texas 77520.

101. On information and belief, Chemicals, Inc. supplied PFCs containing PFOS,

PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

102. Defendant Clariant Corporation (“Clariant”) is a corporation organized and existing under the laws of New York, with its principal place of business at 4000 Monroe Road, Charlotte, North Carolina 28205.

103. On information and belief, Clariant is the successor in interest to the specialty chemicals business of Sandoz Chemical Corporation (“Sandoz”). On information and belief, Sandoz spun off its specialty chemicals business to form Clariant in 1995.

104. On information and belief, Clariant supplied PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

105. Defendant Nation Ford Chemical Co. (“Nation Ford”) is a corporation organized and existing under the laws of South Carolina, with its principal place of business located at 2300 Banks Street, Fort Mill, South Carolina 29715.

106. On information and belief, Nation Ford supplied PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

107. On information and belief, 3M, ChemDesign, Deepwater Chemicals, and DuPont also supplied PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in AFFF/Component Products.

108. On information and belief, the PFC Defendants supplied PFCs containing PFOS, PFOA, and/or their chemical precursors for use in manufacturing the fluorosurfactants used in

AFFF/Component Products that were stored, handled, used, tested, otherwise discharged, and/or disposed at CWS.

109. Defendants represent all or substantially all of the market for AFFF/Component Products at CWS.

4. Doe Defendants 1-20

110. Doe Defendants 1-20 are unidentified entities or persons whose names are presently unknown and whose actions, activities, and omissions: (a) may have permitted, caused and/or contributed to the contamination of Plaintiff and Class members' water sources; (b) may be vicariously responsible for entities or persons who permitted, caused, and/or contributed to the contamination of Plaintiff and Class members' water sources; or (c) may be successors in interest to entities or persons who permitted, caused, and/or contributed to the contamination of Plaintiff and Class members' water sources. After reasonable search and investigation to ascertain the Doe Defendants' actual names, the Doe Defendants' actual identities are unknown to Plaintiff and Class members, as they are not linked with any of the Defendants on any public source.

111. Doe Defendants 1-20, either in their own capacity or through a party they are liable for: (a) designed, manufactured, marketed, distributed, and/or sold AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors, and/or designed, manufactured, marketed, distributed, and/or sold the fluorosurfactants and/or PFCs contained in AFFF/Component Products; (b) used, handled, transported, stored, discharged, disposed of, designed, manufactured, marketed, distributed, and/or sold PFOS, PFOA, and/or their chemical precursors, or other AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors; or (c) failed to timely perform necessary and reasonable response and remedial measures to releases of PFOS, PFOA, and/or their chemical precursors, or other AFFF/Component

Products containing PFOS, PFOA, and/or their chemical precursors in to the environment in which Plaintiff and Class members' water supplies exist.

112. All Defendants, at all times material herein, acted by and through their respective agents, servants, officers, and employees, actual or ostensible, who then and there were acting within the course and scope of their actual or apparent agency, authority, or duties. Defendants are each liable based on such activities, directly and vicariously.

IV. FACTUAL ALLEGATIONS RELEVANT TO ALL CAUSES OF ACTION

A. PFOA and PFOS Pose Risks to the Environment and Public Health

113. PFAS are chemical compounds containing fluorine and carbon. These substances have been used for decades in the manufacture of, among other things, household and commercial products that resist heat, stains, oil, and water. These substances are not naturally occurring and must be manufactured.

114. The two most widely studied types of these substances are PFOA and PFOS.

115. PFOA and PFOS have unique properties that cause them to be: (a) mobile and persistent, meaning that they readily spread into the environment where they break down very slowly; (b) bioaccumulative and biomagnifying, meaning that they tend to accumulate in organisms and up the food chain; and (c) toxic, meaning that they pose serious health and environmental risks to humans and animals.

116. PFOA and PFOS easily dissolve in water, and thus they are mobile and easily spread in the environment. PFOA and PFOS also readily contaminate soils and leach from the soil into surface and ground water, where they can travel significant distances.

117. PFOA and PFOS are characterized by the presence of multiple carbon-fluorine bonds, which are exceptionally strong and stable. As a result, PFOA and PFOS are thermally, chemically, and biologically stable. They resist breakdown or environmental degradation due to

light, water, and biological processes, and as such, are persistent when released into the environment.

118. Bioaccumulation occurs when an organism absorbs a substance at a rate faster than the rate at which the substance is lost by metabolism and excretion. Biomagnification occurs when the concentration of a substance in the tissues of organisms increases as the substance travels up the food chain.

119. PFOA and PFOS bioaccumulate/biomagnify in numerous ways. First, they are relatively stable once ingested, so that they bioaccumulate in individual organisms for significant periods of time. Because of this stability, any newly ingested PFOA and PFOS will be added to any PFOA and PFOS already present. In humans, PFOA and PFOS remain in the body for years.

120. PFOA and PFOS biomagnify up the food chain. This occurs, for example, when humans eat fish that have ingested PFOA and/or PFOS.

121. PFAS are readily absorbed after consumption or inhalation and accumulate primarily in the bloodstream, kidneys, and liver.

122. Because certain PFAS chemicals are toxic, exposure to them poses serious health risks to humans and animals.

B. Defendants' Manufacture and Sale of AFFF/Component Products

123. AFFF is a type of water-based foam that was first developed in the 1960s to extinguish hydrocarbon fuel-based fires.

124. AFFF is a Class-B firefighting foam. It is mixed with water and used to extinguish fires that are difficult to fight, particularly those that involve petroleum or other flammable liquids.

125. AFFF is synthetically formed by combining fluorine-free hydrocarbon foaming agents with fluorosurfactants. When mixed with water, the resulting solution produces an aqueous

film that spreads across the surface of hydrocarbon fuel. This film provides fire extinguishment and is the source of the designation AFFF.

126. Beginning in the 1960s, the AFFF Defendants designed, manufactured, marketed, distributed, and/or sold AFFF/Component Products that used fluorosurfactants containing either PFOS, PFOA, or the chemical precursors that degrade into PFOS and PFOA.

127. AFFF can be made without the fluorosurfactants that contain PFOA, PFOS, and/or their precursor chemicals. Fluorine-free firefighting foams, for instance, do not release PFOA, PFOS, and/or their precursor chemicals into the environment.

128. The fluorosurfactants used in 3M's AFFF/Component Products were manufactured by 3M's patented process of electrochemical fluorination ("ECF").

129. The fluorosurfactants used in other AFFF/Component Products sold by the AFFF Defendants were manufactured by the Fluorosurfactant Defendants through the process of telomerization.

130. The PFCs the Fluorosurfactant Defendants needed to manufacture those fluorosurfactants contained PFOS, PFOA, and/or their chemical precursors and were designed, manufactured, marketed, distributed, and/or sold by the PFC Defendants.

131. On information and belief, the PFC and Fluorosurfactant Defendants were aware that the PFCs and fluorosurfactants they designed, manufactured, marketed, distributed, and/or sold would be used in the AFFF/Component Products designed, manufactured, marketed, distributed, and/or sold by the AFFF Defendants.

132. On information and belief, the PFC and Fluorosurfactant Defendants designed, manufactured, marketed, distributed, and/or sold the PFC and/or fluorosurfactants contained in the

AFFF/Component Products discharged into the environment of Plaintiff and other Class members during fire protection, and response activities, resulting in widespread PFAS contamination.

133. On information and belief, the AFFF Defendants designed, manufactured, marketed, distributed, and/or sold the AFFF/Component Products discharged into the environment during fire protection and response activities, resulting in widespread PFAS contamination to Plaintiff and other Class members.

C. Defendants' Knowledge of the Threats to Public Health and the Environment Posed by PFOS and PFOA

134. On information and belief, by at least the 1970s, 3M and DuPont knew or should have known that PFOA and PFOS are mobile and persistent, bioaccumulative and biomagnifying, and toxic.

135. On information and belief, 3M and DuPont concealed from the public and government agencies their knowledge of the threats to public health and the environment posed by PFOA and PFOS.

136. Some or all of the Defendants understood how stable the fluorinated surfactants used in AFFF/Component Products are when released into the environment, from their first sale to a customer, yet they failed to warn their customers or provide reasonable instruction on how to manage wastes generated from their AFFF/Component Products.

1. 1940s -1950s: 3M, DuPont, and the Development of a Toxic Chemical Family

137. The development of this family of chemical compounds began with 3M in the 1940s. At that time, 3M's Central Research Laboratory was working with a scientist at Penn State University, Joseph H. Simons ("Simons"), who had developed and patented a process of preparing fluorine compounds through ECF. In 1945, 3M acquired Simons' ECF patents. It would be another three years before 3M's Central Research developed fluorinated compounds that could be

used for commercial applications. During that time, 3M scientists continuously researched and created new fluorochemicals; in the words of one researcher, “[a]most every day we made a new molecule which had never been on the face of the earth before.”²

138. From the early days of its fluorochemical research, 3M recognized the very characteristics that make PFAS persistent pollutants in the environment today. For example, Simons’ 1948 patent for the ECF, which was assigned to 3M, stated that the compounds produced through ECF are non-corrosive, and of little chemical reactivity, and do not react with any of the metals at ordinary temperatures and react only with the more chemically reactive metals such as sodium, at elevated temperatures.³

139. The patent also stated that the fluorochemicals produced by the ECF process do not react with other compounds or reagents due to the blanket of fluorine atoms surrounding the carbon skeleton of the molecule. 3M understood that the stability of the carbon-to-fluorine bonds prevented its fluorosurfactants from undergoing further chemical reactions or degrading under natural processes in the environment.⁴

140. 3M was also aware of the thermal stability of its fluorinated compounds prior to commercial production. Simons’ ECF patent states that the compounds produced by the ECF

² Neil McKay, *A Chemical History of 3M: 1933-1990* at 30 (3M Chem., Film & Allied Prods Grp.) (1991), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1365.pdf>

³ Joseph H. Simons, *Fluorination of Organic Compounds*, U.S. Patent No. 2,447,717 (issued Aug. 24, 1948), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1005.pdf>.

⁴ Dr. J.H. Simons, *Fluorocarbons and Their Production*, *Fluorine Chemistry*, 1(12): 401-422 (1950), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX3008.pdf>.

process were thermally stable at temperatures up to 750° C (1,382° F). Additional research by 3M expanded its understanding of the thermal stability of fluorinated compounds.⁵

141. In 1949, 3M built the first manufacturing facility to expand ECF from laboratory research to commercial production and it began to present its fluorochemical research in order to find potential uses and customers for the compounds it was manufacturing.

142. 3M soon found a customer: DuPont. In 1951, DuPont began purchasing a perfluorinated carboxylic acid (perfluorooctanoic acid or PFOA), for use in manufacturing a non-stick coating called Teflon.

143. Even then, 3M's research had already documented that PFAS accumulate in the blood of mice exposed to the chemicals in laboratory tests.⁶ Also, a 1956 study by researchers at Stanford University found that PFAS bind to proteins in human blood.⁷

144. In 1964, a group of DuPont employees working in Teflon manufacturing became sick after their department was moved to a more enclosed workspace.⁸ They experienced chills, fever, difficulty breathing, and a tightness in the chest — symptoms referred to variously as

⁵ T.J. Bryce, *Fluorocarbons - Their Properties and Wartime Development*, Fluorine Chemistry, 1(13): 423-462 (1950).

⁶ 1950 3M test study results with Perfluorobutyric acid. https://static.ewg.org/reports/2019/pfa-timeline/1950_Mice.pdf?_ga=2.21758526.426747500.1673645134-2012946541.1673645134.

⁷ Gordon L. Nordby and J. Murray Luck, *Perfluorooctanoic Acid Interactions with Human Serum Albumin*, J. Biol. Chem. (1956) 219:399-404, https://static.ewg.org/reports/2019/pfa-timeline/1956_Stanford.pdf?_ga=2.59569645.1994765108.1678715813-813372143.1678715813.

⁸ Charles E. Lewis and Gerald R. Kerby, *An Epidemic of Polymer-Fume Fever*, 191 JAMA 375 (Feb. 1, 1965), [https://jamanetwork.com/journals/jama/article-abstract/654702#:~:text=An%20%22epidemic%22%20of%20polymer,pyrolysis%20of%20polytetrafluoroethylene%20\(Teflon\).](https://jamanetwork.com/journals/jama/article-abstract/654702#:~:text=An%20%22epidemic%22%20of%20polymer,pyrolysis%20of%20polytetrafluoroethylene%20(Teflon).)

“polymer-fume fever,” “Teflon flu,” or simply, “the shakes.” Polymer-fume fever was first reported in medical literature in 1951.

2. 1960s: AFFF’s Environmental Hazards Come Into Focus

145. By at least the end of the 1960s, additional research and testing performed by 3M and DuPont indicated that fluorosurfactants, including at least PFOA, because of their unique chemical structure, were resistant to environmental degradation and would persist in the environment essentially unaltered if allowed to enter the environment.

146. One 3M employee wrote in 1964: “This chemical stability also extends itself to all types of biological processes; *there are no known biological organisms that are able to attack the carbon-fluorine bond in a fluorocarbon.*”⁹ (Emphasis added). Thus, 3M knew by the mid-1960s that its surfactants were immune to chemical and biological degradation in soils and water.

147. 3M also knew by 1964 that fluorocarbon carboxylic acids, when dissolved, dissociated to form highly stable perfluorocarboxylate and perfluorosulfonate ions. Later studies by 3M on the adsorption and mobility of FC-95 (the potassium salt of PFOS) and FC-143 (the ammonium salt of PFOA) in soils indicated very high solubility and very high mobility in soils for both compounds.¹⁰

148. Also, in a 1965 study sponsored by DuPont where rats were fed a PFAS compound over a ninety-day period the rats had liver damage and showed an increased size in the spleen.

149. Despite early warnings of the toxic, persistent, and bioaccumulative nature of PFOS and PFOA, these chemicals began to be used in a product that would be released in large quantities

⁹ H.G. Bryce, *Industrial and Utilitarian Aspects of Fluorine Chemistry*, Minn. Mining & Mfg. Co. (1964) at 310, <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX3022.pdf>.

¹⁰ Technical Report Summary re: Adsorption of FC 95 and FC143 on Soil, 3M (Feb. 27, 1978), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1158.pdf>.

directly into the environment whenever used: firefighting foam.

150. AFFF was first developed in the 1960s as a result of the U.S. Navy's research into the use of fluorosurfactants in firefighting foam to extinguish fuel-based shipboard fires.

151. In 1969, the Navy promulgated a military standard or "MilSpec" requiring contractors to use "fluorocarbon surfactants" in firefighting foam products. Since then, the Navy has revised this MilSpec multiple times, but at no time did the Navy specify the specific fluorosurfactants to be used in AFFF. The AFFF MilSpec was a "performance specification," meaning that the product manufacturers were given great flexibility with respect to designing a product that would meet the military's performance requirements.

152. Firefighting foam can be made without the fluorosurfactants that contain PFOA, PFOS, and/or their precursor chemicals.

153. When the Navy first promulgated the AFFF MilSpec, hundreds of different fluorosurfactants had already been created.

154. Nonetheless, beginning in the 1960s, the AFFF Defendants designed, manufactured, marketed, distributed, and/or sold AFFF/Component Products that used fluorosurfactants containing either PFOS, PFOA, or the chemical precursors that degrade into PFOS and PFOA.

155. From the late 1960s to 2002, 3M manufactured and sold AFFF containing PFOS under the brand name "Light Water."

156. Because 3M held the patents on the ECF process, other AFFF Defendants utilized PFAS produced through a different process, called fluorotelomerization. These fluorotelomer AFFF formulations were produced beginning in the 1970s. Although they are not made with

PFOA, they contain precursors – polyfluorinated compounds that are known to degrade to compounds that include PFOA.

157. On information and belief, the AFFF Defendants designed, manufactured, marketed, distributed, and/or sold the AFFF/Component Products discharged into the environment during fire protection, training, and response activities, resulting in widespread PFAS contamination.

158. The AFFF Defendants treated their foam formulations as proprietary information and did not disclose the specific chemical ingredients of their formulations to government agencies or the public.

159. Some or all of the Defendants understood how stable the fluorinated surfactants used in AFFF are when released into the environment from their first sale to a customer, yet they failed to warn their customers or provide reasonable instruction on how to manage wastes generated from their products.

3. 1970s - 1980s: Defendants' Deepening Knowledge of the Risks of PFOA and PFOS

160. By at least the 1970s, as Defendants expanded the market for AFFF formulations containing PFOA and PFOS, 3M and DuPont knew or should have known that PFOA and PFOS are mobile and persistent, bioaccumulative and biomagnifying, and toxic.

161. An internal memo from 3M in 1971 states that the “thesis that there is ‘no natural sink’ for fluorocarbons obviously demands some attention.”¹¹ But if 3M did give this issue the attention demanded at this time, it did not share it with the public. In 1975, two independent toxicologists, Dr. William Guy (“Guy”) and Donald Taves (“Taves”), discovered that an

¹¹ Memorandum from H.G. Bryce to R.M. Adams re: Ecological Aspects of Fluorocarbons, (Sept. 13, 1971), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1088.pdf>.

unidentified fluorine compound had been found in human blood sampled from different blood banks. Dr. Guy contacted 3M to ask if it knew of “possible sources” of the chemicals.¹² 3M’s scientists concluded internally that the fluorine compounds resembled PFOS manufactured by 3M, but 3M did not share this conclusion with the independent toxicologists or anyone else outside of 3M.

162. 3M did, however, test the blood of its own workers in 1976, finding “up to 1000 times ‘normal’ amounts of organically bound fluorine in their blood.”¹³

163. By the mid-1970s, 3M and Ansul (and likely other Defendants) had an intimate understanding of the persistent nature of PFCs. A 1976 study, for example, observed no biodegradation of FC-95, the potassium salt of PFOS; a result 3M characterized as “unsurprising” in light of the fact that “[b]iodegradation of FC 95 is improbable because it is completely fluorinated.”¹⁴

164. In 1977, Ansul, the AFFF manufacturer later acquired by Defendant Tyco, authored a report titled, “Environmentally Improved AFFF,” which acknowledged that releasing AFFF into the environment could pose potential negative impacts to water quality.¹⁵ Ansul wrote: “The purpose of this work is to explore the development of experimental AFFF formulations that would exhibit reduced impact on the environment while retaining certain fire suppression

¹² Memorandum from G.H. Crawford to L.C. Krogh et al. re: Fluorocarbons in Human Blood Plasma, (Aug. 20, 1975), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1118.pdf>.

¹³ 3M Chronology – Fluorochemicals in Blood (Aug. 26, 1977), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1144.pdf>.

¹⁴ Technical Report Summary, 3M (Aug. 12, 1976) [3MA01252037].

¹⁵ Ansul Co., *Final Report: Environmentally Improved AFFF*, N00173-76-C-0295 (Dec. 13, 1977), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a050508.pdf>.

characteristics . . . improvements [to AFFF formulations] are desired in the environmental area, *i.e.*, development of compositions that have a reduced impact on the environment without loss of fire suppression effectiveness.” *Id.* Thus, Ansul knew by the mid-1970s that the environmental impact of AFFF needed to be reduced, yet there is no evidence that Ansul (or any other Defendant) ever pursued initiatives to do so.

165. A 1978 3M biodegradation study likewise reported that an “extensive study strongly suggest[ed]” one of its PFAS was “likely to persist in the environment for extended periods unaltered by metabolic attack.”¹⁶ A year later, a 3M study reported that one of its fluorosurfactants “was found to be ‘completely resistant’ to biodegradation under the test conditions,” and that it appeared waterways were the fluorosurfactant’s “environmental ‘sink’”.¹⁷

166. At the same time, several studies sponsored by 3M showed that the fluorosurfactants used in AFFF were even more toxic than previously believed. A study of subacute toxicity in rhesus monkeys, in which the monkeys were to be given doses of PFOS over ninety days, had to be redesigned and repeated “[b]ecause of unexpected early mortalities in all monkeys at all levels”¹⁸ None of the monkeys survived past twenty days. As a summary of

¹⁶ Technical Report Summary re: Fate of Fluorochemicals in the Environment, Biodegradation Studies of Fluorocarbons - II, 3M (Jan. 9, 1978), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1153.pdf>.

¹⁷ Technical Report Summary, Final Comprehensive Report on FM 3422, 3M (Feb. 2, 1979), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX2563.pdf>.

¹⁸ Edwin I. Goldenthal, et al., *Fluorad® Fluorochemical Surfactant FC-95, Ninety-Day Subacute Rhesus Monkey Toxicity Study*, 3M Co. (Dec. 18, 1978), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1191.pdf>; Aborted Study, Edwin I. Goldenthal, et al., *Fluorad® Fluorochemical Surfactant FC95, Ninety-Day Subacute Rhesus Monkey Toxicity Study*, 3M Co. (Jan. 2, 1979), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1193.pdf>; *FC-95, FC-143 and FM-3422 – 90 Day Subacute Toxicity Studies Conducted at IRDC – Review of Final Reports and Summary* (Mar. 20, 1979), <https://static.ewg.org/reports/2019/pfa->

the study stated, PFOS “proved to be considerably more toxic to monkeys than anticipated[.]” *Id.* In addition, PFOA reduced the survival rate of fathead minnow fish eggs,¹⁹ and PFOS and PFOA were shown to be toxic to rats.²⁰ As the summary document observed, “[b]ecause of the apparent persistence of these fluorochemicals in the body, ***the most important question remains possible long term effects.***”²¹ (Emphasis added).

167. In 1979, 3M also completed a comprehensive biodegradation and toxicity study covering investigations between 1975 and 1978. *Id.* More than a decade after 3M began selling AFFF/Component Products containing fluorosurfactants, it wrote: “there has been a general lack of knowledge relative to the environmental impact of these chemicals. . . .” The report ominously asked, “[i]f these materials are not biodegradable, what is their fate in the environment?”²²

168. In 1979, 3M and DuPont discussed 3M’s discovery of high levels of PFOS in the blood of its workers. Both companies came to the same conclusion that there was “no reason” to

timeline/1977_Most%20Toxic.pdf?_ga=2.34744996.426747500.1673645134-2012946541.1673645134.

¹⁹ *The Effects of Continuous Aqueous Exposure to 78.03 on Hatchability of Eggs and Growth and Survival of Fry of Fathead Minnow* (June 1978), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1176.pdf>.

²⁰ Wilson P. Dean and D. Clifford Jessup, et al., Fluorad® Fluorochemical Surfactant FC-143, *Acute Oral Toxicity (LD₅₀) Study in Rats*, 3M Co. (May 5, 1978), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1170.pdf>; FC-95, FC-143 and FM-3422 – 90 Day Subacute Toxicity Studies Conducted at IRDC – Review of Final Reports and Summary (Mar. 20, 1979), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1199.pdf>.

²¹ *Id.* (FC-95, FC-143 and FM-3422 – 90 Day Subacute Toxicity Studies Conducted at IRDC – Review of Final Reports and Summary).

²² Technical Report Summary, Final Comprehensive Report on FM 3422 (Feb. 2, 1979), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX2563.pdf>.

notify the United States Environmental Protection Agency (“EPA”) of the finding.²³

169. 3M told EPA in 1980 only that it had discovered PFOS in the blood of “some of our plant employees[]”, despite its 1976 findings, and knowledge from the 1975 study by Guy and Taves that PFOS had been found in the blood of the general population.

170. By at least the end of the 1980s, additional research and testing performed by Defendants, including at least 3M and DuPont, indicated that elevated incidence of certain cancers and other adverse health effects, including elevated liver enzymes and birth defects, had been observed among workers exposed to such materials, including at least PFOA, but such data was not published, provided to governmental entities as required by law, or otherwise publicly disclosed at the time.

171. In 1981, DuPont tested for and found PFOA in the blood of female plant workers at its Washington Works plant in Parkersburg, West Virginia, where it had been using 3M’s PFOA to manufacture Teflon since 1951. DuPont observed and documented pregnancy outcomes in exposed workers, finding two of seven children born to female plant workers between 1979 and 1981 had birth defects – one an “unconfirmed” eye and tear duct defect, and one a nostril and eye defect.²⁴

172. In 1983, 3M researchers concluded that concerns about PFAS “give rise to concern for environmental safety,” including “legitimate questions about the persistence, accumulation

²³ Memorandum from R.A. Prokop to J.D. Lazerte re: Disclosure of Information on Levels of Fluorochemicals in Blood (July 26, 1979), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX2723.pdf>.

²⁴ C-8 Blood Sampling Results, https://static.ewg.org/files/PFOA_013.pdf?_ga=2.66519018.551244859.1678457860-1788446983.1678457860

potential, and ecotoxicity of fluorochemicals in the environment.”²⁵ That same year, 3M completed a study finding that PFOS caused the growth of cancerous tumors in rats.²⁶ This finding was later shared with DuPont and led them to consider whether “they may be obliged under their policy to call FC-143 a carcinogen in animals.”²⁷

173. In 1984, 3M documented a trend of increasing levels of PFOS in the bodies of 3M workers, leading one of the company’s medical officers to warn in an internal memo: “we must view this present trend with serious concern. It is certainly possible that . . . exposure opportunities are providing a potential uptake of fluorochemicals that exceeds excretion capabilities of the body.”²⁸

174. The same year, DuPont tested drinking water near its Washington Works plant and found elevated PFOA levels in the water, but, after deciding that limiting PFOA discharge from the plant would not be “economically attractive,” it did nothing to reduce contamination from the plant.

²⁵ 3M Environmental Laboratory (EE & PC), Fate of Fluorochemicals - Phase II (May 20, 1983), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1284.pdf>.

²⁶ Two Year Oral (Diet) Toxicity/Carcinogenicity Study of Fluorochemical FC-143 in Rats, Riker Labs, Inc. / 3M Co., Volume 1 of 4 (Aug. 29, 1987), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1337.pdf>.

²⁷ Memorandum from R.G. Perkins to F.D. Griffith re: Summary of the Review of the FC-143 Two-Year Feeder Study Report to be presented at the January 7, 1988 meeting with DuPont, 3M (Jan. 5, 1988), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1343.pdf>.

²⁸ Memorandum from D.E. Roach to P.F. Riehle re: Organic Fluorine Levels, 3M (Aug. 31, 1984), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1313.pdf>.

4. 1990s - 2000s: With 3M and DuPont Under Scrutiny, the AFFF Market Is Forced to Respond

175. Federal law requires chemical manufacturers and distributors to immediately notify EPA if they have information that “reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment” Toxic Substances Control Act of 1976 (“TSCA”) §8(e), 15 U.S.C. §2607(e).

176. Despite its decades of research, 3M waited until May 1998 to submit a report to EPA under TSCA Section 8(e). Even in that submission, however, 3M downplayed what it knew, according to a former employee:

Just before that submission we found PFOS in the blood of eaglets—eaglets still young enough that their only food consisted of fish caught in remote lakes by their parents. This finding indicates a widespread environmental contamination and food chain transfer and probable bioaccumulation and bio-magnification. This is a very significant finding that the 8e reporting rule was created to collect. 3M chose to report simply that PFOS had been found in the blood of animals, which is true but omits the most significant information.²⁹

177. Although 3M finally acknowledged, in 1998, the presence of PFOS in the blood of the general population, it insisted that it did not “believe that any reasonable basis exists to conclude that PFOS presents a substantial risk of injury to health or the environment.” Internally, the message was quite different: 3M’s Manager of Corporate Toxicology advised the company to replace “PFOS-based chemistry as these compounds [are] *VERY persistent and thus insidiously toxic*.”³⁰ (Emphasis added).

²⁹ Letter from R. Purdy to 3M (Mar. 28, 1999), <https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX1001.pdf>.

³⁰ Deena Winter, *Toxic: 3M knew its chemicals were harmful decades ago, but didn’t tell the public, government*, Minn. Reformer, (Dec. 15, 2022) <https://minnesotareformer.com/2022/12/15/toxic-3m-knew-its-chemicals-were-harmful-decades-ago-but-didnt-tell-the-public-government/>

178. In 2000, 3M, after half a century of manufacturing fluorinated chemicals through ECF, announced that it would phase out its production of several long-chain PFAS compounds, including PFOA, although it continued to manufacture other PFAS chemicals.

179. In April 2006, 3M agreed to pay EPA a penalty of more than \$1.5 million after being cited for 244 violations of the TSCA, which included violations for failing to disclose studies regarding PFOS, PFOA, and other PFCs dating back decades.

180. Likewise, in December 2005, EPA announced it was imposing the “Largest Environmental Administrative Penalty in Agency History” against DuPont based on evidence that it violated the TSCA by concealing the environmental and health effects of PFOA.³¹

181. On information and belief, Defendants knew or should have known that AFFF/Component Products containing PFOA or PFOS would very likely injure and/or threaten public health and the environment, even when used as intended or directed.

182. Defendants failed to warn of these risks to the environment and public health, including the impact of their AFFF/Component Products on the quality of unprotected water sources.

183. Defendants were all sophisticated and knowledgeable in the art and science of designing, formulating, and manufacturing AFFF/Component Products. They understood far more about the properties of their AFFF/Component Products – including the potential hazards they posed to human health and the environment – than any of their customers. Still, Defendants declined to use their sophistication and knowledge to design safer products.

³¹ News Release, *EPA Settles PFOA Case Against DuPont for Largest Environmental Administrative Penalty in Agency History*, EPA (Dec. 14, 2005), https://www.epa.gov/archive/epapages/newsroom_archive/newsreleases/fdcb2f665cac66bb852570d7005d6665.html

5. 2000s: Formation of the Fire Fighting Foam Coalition

184. Following 3M’s phase-out of ECF production and its AFFF product, telomerization emerged as the dominant manufacturing process for fluorosurfactants. 3M had been the dominant manufacturer in the lucrative AFFF market, and multiple companies seized the opportunity created by 3M’s withdrawal. But the market opportunity presented uncertainties, as it was unclear whether regulators would view the telomer-based AFFF as posing the same hazards as 3M’s PFOS-containing AFFF. The key question for regulators was whether the telomer-based AFFF would degrade to PFOA once in the environment.

185. Defendants Tyco, Chemguard, Kidde, National Foam, and Buckeye formed a group called the Fire Fighting Foam Coalition (“FFFC”) to protect their business opportunity and advocate for the continued use of telomer-based AFFF. The FFFC declared that it would serve as “a single source for accurate, balanced information on environment related questions”³² and would “ensure that accurate information about PFOS alternatives, including telomer-based products, is disseminated into the marketplace.” *Id.* The FFFC made several representations regarding the safety of telomer-based AFFF that were either misleading half-truths or were contrary to Defendants’ internal knowledge. For example, the FFFC assured the public that “[t]here is no known biological pathway by which telomer-based AFFF can be oxidized or metabolized into PFOS.” *Id.* This statement was true, but only because PFOS was exclusively manufactured by 3M, and it did not mean that telomer-based AFFF was any safer.

186. The FFFC also told EPA in 2001 that “[t]elomer-based AFFF is not made from PFOA-based products.” *Id.* The issue, however, was whether telomer-based AFFF could degrade

³² *Fact Sheet on AFFF Fire Fighting Agents*, Fire Fighting Foam Coalition, https://static.ewg.org/reports/2020/pfas-firefighter-timeline/2002-03-FFFC.pdf?_ga=2.136386352.1253861871.1649070681-2123137255.1639662520.

into PFOA. One company executive admitted in an internal memo that his company's AFFF "will degrade in the environment" to produce PFOA and the "question is how toxic" and how "bioaccumulative" these degraded products are.³³ But contrary to this internal acknowledgment, the FFFC publicly asserted that "telomer-based fire fighting foams are not likely to be a source of PFOA in the environment."³⁴

187. EPA appointed a committee known as the Telomer Technical Workgroup to make recommendations to the agency. The president of the FFFC represented the telomer-based AFFF industry on the EPA committee. When, in 2003, the Telomer Technical Workgroup reported its conclusions and recommendations, the FFFC president was the spokesperson.

188. In what the FFFC president called a "major victory" for the industry, EPA accepted the proposal of its Workgroup that "telomer-based fire fighting foams no longer be considered as part of the PFOA ECA [Emission Control Area] process." *Id.* The FFFC president remarked that "[w]hen we started this organization two years ago [in 2001], the fate of telomer-based AFFF was being tied directly to the fate of PFOA and EPA had just told the military to start searching for alternatives to AFFF." *Id.* The telomer-based AFFF Defendants had successfully forestalled government restrictions on their products, thereby prolonging the use of AFFF by CWS and other Class members.

³³ *In Re: Aqueous Film-Forming Foams Prods. Liab. Litig.*, 2:18-mn-02873-RMG:28, Email chain from John Dowling to Anne Regina re: EPA meeting: Comments (Apr. 18, 2001) attached as an exhibit to Plaintiffs' Omnibus Opposition to Defendants' Motion for Partial Summary Judgment on the Second and Third Prongs of the Government Contractor Immunity Defense, ECF 2409-112.

³⁴ *In Re: Aqueous Film-Forming Foams Prods. Liab. Litig.*, 2:18-mn-02873-RMG:28, Email from Tom Cortina to Members re: PFOA ECA Plenary Meeting (Oct. 30, 2003) attached as an exhibit to Plaintiffs' Omnibus Opposition to Defendants' Motion for Partial Summary Judgment on the Second and Third Prongs of the Government Contractor Immunity Defense, ECF 2409-108.

189. Fluorochemicals, needed by the Fluorosurfactant Defendants to manufacture those fluorosurfactants contained PFOS, PFOA, and/or their chemical precursors, and were designed, manufactured, marketed, distributed, and/or sold by the PFC Defendants.

190. On information and belief, the PFC and Fluorosurfactant Defendants were aware that the fluorochemicals and fluorosurfactants they designed, manufactured, marketed, distributed, and/or sold would be used in the AFFF/Component Products designed, manufactured, marketed, distributed, and/or sold by the AFFF Defendants.

191. On information and belief, the PFC and Fluorosurfactant Defendants designed, manufactured, marketed, distributed, and/or sold the fluorochemicals and/or fluorosurfactants contained in the AFFF/Component Products discharged into the environment during fire protection, training, and response activities, resulting in widespread PFAS contamination.

D. The Scientific Community Discovers the Impact of PFOS and PFOA on the Environment and Human Health

192. As discussed above, neither 3M or DuPont, nor, on information and belief, any other Defendant, complied with their obligations to notify EPA about the “substantial risk of injury to health or the environment” posed by their AFFF/Component Products. *See* TSCA §8(e).

193. A study from the U.S. Centers for Disease Control and Prevention, with national sampling conducted between 1999-2000, found that PFAS chemicals were detected in 98% of the U.S. general population.³⁵

194. Once the truth about PFOS and PFOA was revealed to the scientific community, researchers began to study the environmental and health effects associated with them, including a

³⁵ PFAS, Agency for Toxic Substances & Disease Registry (Dec. 8, 2020), <https://www.atsdr.cdc.gov/atsdrtoday/stories/pfas.html>.

“C8 Science Panel” formed in 2005 out of a class action settlement arising from contamination from DuPont’s Washington Works located in Wood County, West Virginia.

195. The C8 Science Panel consisted of three epidemiologists specifically tasked with determining whether there was a probable link between PFOA exposure and human diseases. In 2012, the C8 Science Panel found probable links between PFOA and kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, pregnancy-induced hypertension (including preeclampsia), and hypercholesterolemia. “Probable link” was defined “to mean that given the available scientific evidence, it is more likely than not that among class members a connection exists between PFOA exposure and a particular human disease.”³⁶ Human health effects associated with PFOS exposure include immune system effects, changes in liver enzymes and thyroid hormones, low birth weight, high uric acid, and high cholesterol. In laboratory testing on animals, PFOA and PFOS have caused the growth of tumors, changed hormone levels, and affected the function of the liver, thyroid, pancreas, and immune system.³⁷

196. The health injuries caused by PFAS can arise days or years after exposure.

197. Even after the C8 Science Panel publicly announced that human exposure to 50 ppt, or more, of PFOA in drinking water for one year or longer had “probable links” with certain human diseases, including kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, preeclampsia, and medically diagnosed high cholesterol, Defendants repeatedly assured and represented to governmental entities, their customers, and the public (and continue to do so) that

³⁶ Probable Link Evaluation for heart disease (including high blood pressure, high cholesterol, coronary artery disease) (Oct. 29, 2012) http://www.c8sciencepanel.org/pdfs/Probable_Link_C8_Heart_Disease_29Oct2012.pdf.

³⁷ Kellyn S. Betts, *PERFLUOROALKYL ACIDS: What Is the Evidence Telling Us?* Environ. Health Perspect. (May 2007), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1867999/>

the presence of PFOA in human blood at the levels found within the United States presents no risk of harm and is of no legal, toxicological, or medical significance of any kind.

198. Furthermore, Defendants have represented to and assured such governmental entities, their customers, and the public (and continue to do so) that the work of the independent C8 Science Panel was inadequate to satisfy the standards of Defendants to prove such adverse effects upon and/or any risk to humans with respect to PFOA in human blood.

199. At all relevant times, Defendants, through their acts and/or omissions, controlled, minimized, trivialized, manipulated, and/or otherwise influenced the information that was published in peer review journals, released by any governmental entity, and/or otherwise made available to the public relating to PFAS in human blood and any alleged adverse impacts and/or risks associated therewith, effectively preventing the public from discovering the existence and extent of any injuries/harm as alleged herein.

E. Federal, State, and Internal Governmental Agencies Call for Monitoring and Cleanup of PFAS Contamination

200. On May 2, 2012, EPA published its Third Unregulated Contaminant Monitoring Rule, requiring public water systems nationwide to monitor, between 2013 and 2015, for 30 contaminants of concern, including PFOS and PFOA.³⁸

201. In May 2015, “The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs),” scientists and other professionals from a variety of disciplines concerned about the production and release into the environment of PFOA, called for greater regulation, restrictions, limits on the manufacture and handling of any PFOA containing product, and development of safe

³⁸ *Revisions to the Unregulated Contaminant Monitoring Regulation (UCMR 3) for Public Water Systems*, 77 Fed. Reg. 26072 (May 2, 2012).

non-fluorinated alternatives to these products, to avoid long-term harm to human health and the environment.³⁹

202. On May 25, 2016, EPA released lifetime health advisories (“HAs”) and health effects support documents for PFOS and PFOA.⁴⁰ EPA developed the HAs to assist governmental officials in protecting public health when PFOS and PFOA are present in drinking water. The HAs identified the concentration of PFOS and PFOA in drinking water at or below which adverse health effects are not anticipated to occur over a lifetime of exposure at 70 ppt. The HAs were based on peer-reviewed studies of the effects of PFOS and PFOA on laboratory animals (rats and mice) and were also informed by epidemiological studies of human populations exposed to PFAS. These studies indicated that exposure to PFOS and PFOA over these levels may result in adverse health effects, including:

- (a) developmental effects to fetuses during pregnancy or to breastfed infants (*e.g.*, low birth weight, accelerated puberty, skeletal variations);
- (b) cancer (testicular and kidney);
- (c) liver effects (tissue damage);
- (d) immune effects (*e.g.*, antibody production and immunity); and
- (e) thyroid disease and other effects (*e.g.*, cholesterol changes).

³⁹ Arlene Blum, Simona A. Balan, et al., *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)*, Environ. Health Perspect. 123:A107–A111 (May 1, 2015), <http://dx.doi.org/10.1289/ehp.1509934>.

⁴⁰ See 81 Fed. Reg. 33250 (May 25, 2016); *Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate*, EPA, https://www.epa.gov/sites/default/files/2016-05/documents/pfoa_pfos_prepub_508.pdf; see also *National Ass’n for Surface Finishing v. EPA*, 795 F.3d 1, 4, 6 (D.C. Cir. 2015) (referring to PFOS as a “toxic compound” and a “hazardous chemical.”).

203. In 2016, the National Toxicology Program (“NTP”) of the United States Department of Health and Human Services and the International Agency for Research on Cancer (“IARC”) both released extensive analyses of the expanding body of research regarding the adverse effects of PFCs. The NTP concluded that both PFOA and PFOS are “presumed to be an immune hazard to humans” based on a “consistent pattern of findings” of adverse immune effects in human (epidemiology) studies and “high confidence” that PFOA and PFOS exposure was associated with suppression of immune responses in animal (toxicology) studies.⁴¹

204. The IARC similarly concluded that there is “evidence” of “the carcinogenicity of . . . PFOA” in humans and in experimental animals, meaning that “[a] positive association has been observed between exposure to the agent and cancer for which a causal interpretation is . . . credible.”⁴²

205. The United States Senate and House of Representatives passed the National Defense Authorization Act in November 2017, which included \$42 million to remediate PFC contamination from military bases, as well as devoting \$7 million toward the Investing in Testing Act, which authorizes the Center for Disease Control and Prevention to conduct a study into the long-term health effects of PFOA and PFOS exposure.⁴³ The legislation also required that the

⁴¹ See U.S. Dep’t of Health and Human Services, Nat’l Toxicology Program, *NTP Monograph: Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid or Perfluorooctane Sulfonate* (Sept. 2016), at 1, 17, 19, https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf.

⁴² See Int’l Agency for Research on Cancer, IARC Monographs: *Some Chemicals Used as Solvents and in Polymer Manufacture* (Dec. 2016), at 27, 97, <http://monographs.iarc.fr/ENG/Monographs/vol110/mono110.pdf>.

⁴³ National Defense Authorization Act for Fiscal Year 2018, H.R. 2810, 115th Congress (Dec. 12, 2017), <https://www.congress.gov/115/plaws/publ91/PLAW-115publ91.pdf>.

Department of Defense submit a report on the status of developing a new military specification for AFFF that did not contain PFOS or PFOA.⁴⁴

206. In December 2019, the United States Senate and House of Representatives passed the National Defense Authorization Act for Fiscal Year 2020 (“FY 2020 NDAA”), which introduced new prohibitions on the use of PFAS-containing AFFF for land-based applications.⁴⁵ Section 322 of the Act introduced a timeline for the phasing out of AFFF use by the military, including by requiring the Secretary of the Navy to publish a new military specification for a fluorine-free fire-fighting agent for use at all military installations by January 31, 2023. Section 322(b) and (c) provide that Department of Defense organizations will no longer be authorized to purchase AFFF containing more than 1 part per billion of PFAS after October 1, 2023, and that after October 1, 2024, this prohibition will extend to the use of any PFAS-containing AFFF at any military installation.

207. On February 20, 2020, EPA announced a proposed decision to regulate PFOA and PFOS under the Safe Drinking Water Act, 42 U.S.C. §300f *et seq.*, which the agency characterized as a “key milestone” in its efforts to “help communities address per- and polyfluoroalkyl substances (PFAS) nationwide.”⁴⁶

⁴⁴ *Id.*; see also U.S. Department of Defense, *Alternatives to Aqueous Film Forming Foam Report to Congress* (June 2018), <https://www.denix.osd.mil/derp/home/documents/alternatives-to-aqueous-film-forming-foam-report-to-congress/>.

⁴⁵ National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116th Congress (Jan. 3, 2019), <https://www.govinfo.gov/content/pkg/BILLS-116s1790enr/pdf/BILLS-116s1790enr.pdf>.

⁴⁶ Press Release, *EPA Announces Proposed Decision to Regulate PFOA and PFOS in Drinking Water*, EPA (Feb. 20, 2020), <https://www.epa.gov/newsreleases/epa-announces-proposed-decision-regulate-pfoa-and-pfos-drinking-water>.

208. In October 2021, EPA launched its PFAS Strategic Roadmap, outlining EPA's commitments to Action for 2021-2024, including national testing to accelerate research and regulatory development, and further actions to broaden and accelerate the cleanup of PFAS.⁴⁷

209. An April 28, 2022, EPA published a guidance memorandum that explained that "EPA will use the NPDES [National Pollution Discharge Elimination System] program to restrict PFAS discharges to water bodies," with recommendations that EPA-issued NPDES permits for facilities where PFAS substances are expected or likely to be present in their discharge, include effluent monitoring, quarterly sampling, and best practices methods based on pollution prevention and source reduction.⁴⁸

210. In July 2022, California added PFOA and PFOS to its Proposition 65 list as chemicals known to cause reproductive toxicity under the Safe Drinking Water and Toxic Enforcement Act of 1986.⁴⁹

211. On August 26, 2022, EPA posted to its website a Notice of Proposed Rulemaking Designating Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA")

⁴⁷ *PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024*, EPA (Oct. 2021), https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

⁴⁸ Memorandum from Radhika Fox, Assistant Administrator, EPA to Water Division Directors EPA Regions 1-10 re: Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority (Apr. 28, 2022) https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

⁴⁹ California Office of Environmental Health Hazard Assessment, *Chemicals Listed Effective Nov. 10, 2017 as Known to the State of California to Cause Reproductive Toxicity: Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS)* (Nov. 9, 2017), <https://oehha.ca.gov/proposition-65/cnr/chemicals-listed-effective-november-10-2017-known-state-california-cause>.

Hazardous Substances, and it allowed for comments from the public through November 7, 2022.⁵⁰ It stated, “[i]f finalized, the direct effects of this proposed CERCLA designation would include requiring that any person in charge of a vessel or facility report releases of PFOA and PFOS of one pound or more within a 24-hour period.”⁵¹ Moreover, “these designations would [also] provide some additional tools that the government and others could use to address PFOA/PFOS contamination and, thus, could facilitate an increase in the pace of cleanups of PFOA/PFOS contaminated sites.” *Id.* The list of potentially affected United States industrial entities includes wastewater treatment plants. *Id.*

212. A December 5, 2022 EPA companion memorandum – the “NPDES Permits memo” – provided recommendations for states, including an “array of NPDES and pretreatment provisions and monitoring programs [to] be implemented by authorized states and POTWs⁵² as appropriate, ***to the fullest extent available under state and local law.***”⁵³ (Emphasis added). They include effluent, influent, and biosolids monitoring, pretreatment program activities to include industrial

⁵⁰ *Proposed Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances*, EPA, <https://www.epa.gov/superfund/proposed-designation-perfluorooctanoic-acid-pfoa-and-perfluorooctanesulfonic-acid-pfos>

⁵¹ *Comprehensive Environmental Response, Compensation, and Liability Act Hazardous Substances: Designation of Perfluorooctanoic Acid and Perfluorooctanesulfonic Acid*, EPA (Sept. 6, 2022) <https://www.regulations.gov/document/EPA-HQ-OLEM-2019-0341-0001>

⁵² Defined by Section 212 of the Clean Water Act as owned by the state or municipality. Glossary of Terms, NPDES Permit Writer Training Manual, EPA, <https://www3.epa.gov/npdes/pubs/glossary.pdf>

⁵³ Memorandum from Radhika Fox, Assistant Administrator, EPA to EPA Regional Water Division Directors, Regions 1-10 regarding Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs (Dec. 5, 2022) https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

user inventories, best management practices for discharges of PFAS, and assessment for presence and reduction of PFAS discharges. *Id.*

213. On March 14, 2023, EPA proposed a legal national drinking water standard for PFAS, proposing a limit of no more than 4 ppt for each PFOA and PFOS, where they can be reliably measured.⁵⁴ If finalized, the proposed regulation will require public water systems to monitor for these chemicals. It will also require systems to notify the public and reduce PFAS contamination if levels exceed the proposed regulatory standards. *Id.*

214. Based on EPA recommendations, Plaintiff and other Class members have now begun, or will imminently incur expenditures to, monitor for and report detectable PFAS, at least quarterly. This is in order to: (1) “ensure that there are adequate data to assess the presence and concentration of PFAS in discharges[]” and provide EPA with discharge monitoring reports; (2) update, revise, and/or create industrial user inventories to identify and locate all possible industrial users that might be subject to pretreatment programs; and (3) utilize best method practices and pollution prevention to address PFAS discharges to POTWs, including: (a) updating industrial user permits/controls to require quarterly monitoring, where applicable; (b) developing industrial users best practices methods or local limits, where applicable; and/or (c) “encourag[ing] pollution prevention, product substitution, and good housekeeping practices to make meaningful reductions in PFAS introduced to POTWs.” *Id.*

⁵⁴ *Biden-Harris Administration Proposes First-Ever National Standard to Protect Communities from PFAS in Drinking Water*, EPA (Mar. 14, 2023), <https://www.epa.gov/newsreleases/biden-harris-administration-proposes-first-ever-national-standard-protect-communities>

F. AFFF Containing PFOS and PFOA Is Fungible and Commingled in the Surface/Ground Water

215. AFFF containing PFOS and/or PFOA, once it has been released to the environment, lacks characteristics that would enable identification of the company that manufactured that particular batch of AFFF or chemical feedstock.

216. A subsurface plume, even if it comes from a single location, such as a retention pond or fire training area, originates from mixed batches of AFFF and chemical feedstock coming from different manufacturers.

217. Because precise identification of the specific manufacturer of any given AFFF/Component Product that was a source of the PFAS found by Plaintiff and Class members is nearly impossible, given certain exceptions, Plaintiff, on behalf of all similarly situated Class members, must pursue all Defendants, jointly and severally.

218. Defendants are also jointly and severally liable because they conspired to conceal the true toxic nature of PFOS and PFOA, to profit from the use of AFFF/Component Products containing PFOS and PFOA, at Plaintiff and other Class members' expense, and to attempt to avoid liability.

V. ADDITIONAL ALLEGATIONS ON MARKET SHARE LIABILITY, ALTERNATIVE LIABILITY, CONCERT OF ACTION, AND ENTERPRISE LIABILITY

219. Defendants in this action are manufacturers that control a substantial share of the market for AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors in the United States and are jointly responsible for the contamination of the groundwater and biosolids to Plaintiff and other Class members. Market share liability attaches to all Defendants, and the liability of each should be assigned according to its percentage of the market for AFFF/Component Products at issue in this Complaint.

220. Because PFAS is fungible, it is impossible to identify the exact Defendant who manufactured any given AFFF/Component Product containing PFOS, PFOA, and/or their chemical precursors found free in the air, soil or groundwater, and each of these Defendants participated in a territory-wide and United States national market for AFFF/Component Products during the relevant time.

221. Concert of action liability attaches to all Defendants, each of which participated in a common plan to commit the torts alleged herein and each of which acted tortuously in pursuance of the common plan to knowingly manufacture and sell inherently dangerous AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors.

222. Enterprise liability attaches to all the named Defendants for casting defective products into the stream of commerce.

VI. EQUITABLE TOLLING OF APPLICABLE STATUTE OF LIMITATIONS

223. Within the period of any applicable statutes of limitation, Plaintiff and members of the proposed Class could not have discovered through the exercise of reasonable diligence that Defendants failed to disclose the indestructibility and pervasiveness of PFAS in the environment, including in surface water sources.

224. Plaintiff and the other Class members did not discover and did not know of facts that would have caused a reasonable person to suspect that Defendants failed to disclose the indestructibility and pervasiveness of PFAS in the environment, including in surface and ground water sources. The information indicating the harm and pervasiveness of PFAS was, up until recently, within the exclusive knowledge of Defendants.

225. Defendants actively misled and prevented the public, including Plaintiff and other Class members, from discovering the facts essential to the filing of a timely lawsuit.

226. As such, Plaintiff and other Class members could not have reasonably discovered the true extent of Defendants' deception with regard to pervasiveness and harm caused by PFAS contained in Defendants' AFFF/Component Products.

227. Once Plaintiff and other Class members became aware of the contamination and pervasiveness of PFAS in the environment, including in their wastewater supplies, Plaintiff and other Class members diligently and actively began to pursue judicial remedies. In fact, Plaintiff and other Class members have been testing their wastewater effluent, other products (such as reuse water) and biosolids using draft analytical methods because EPA has not yet approved any analytical methods to test wastewater/biosolids for PFAS chemicals. Plaintiff and other Class members have only recently been able to use these draft analytical methods to determine whether PFAS chemicals are present in their wastewater, biosolids, and related products.⁵⁵

228. For these reasons, equitable tolling applies to all applicable statutes of limitation in order to prevent unfairness to Plaintiff and Class members.

VII. ADDITIONAL ALLEGATIONS SUPPORTING PUNITIVE DAMAGES

229. Defendants engaged in willful, wanton, malicious, and/or reckless conduct that caused the foregoing damage upon Plaintiff and other Class members, disregarding their protected rights.

230. Defendants' willful, wanton, malicious, and/or reckless conduct includes but is not limited to Defendants' failure to take all reasonable measures to ensure PFAS would not be released into the environment and inevitably caused contamination Plaintiff and other Class members.

⁵⁵ The state and federal regulatory agencies have only recently begun to require Plaintiff and other Class members to test for the presence of PFAS chemicals and for some, that testing would only begin once EPA finalizes analytical methods to be used.

231. Defendants, acting with implied malice and an outrageously conscious disregard for Plaintiff's and other Class members' rights and safety, have caused great harm to Plaintiff and other Class members, such that the imposition of punitive damages is warranted.

VIII. CLASS ACTION ALLEGATIONS

232. Pursuant to Rule 23(b)(2)-(3) and (c)(4) of the Federal Rules of Civil Procedure, Plaintiff, individually and on behalf of all others similarly situated, brings this lawsuit on behalf of itself and as a class action on behalf of the following Nationwide Class:

All POTWs located and operating within the United States that have detectable amounts of PFOA and/or PFOS from AFFF.

233. In the alternative, pursuant to Rule 23(b)(2)-(3) and (c)(4) of the Federal Rules of Civil Procedure, Plaintiff, individually and on behalf of all others similarly situated, brings this lawsuit on behalf of itself and as a class action on behalf of the following South Carolina Class or Subclass.

All POTWs located and operating within the state of South Carolina that have detectable amounts of PFOA and/or PFOS from AFFF.

234. The Nationwide Class and the South Carolina Class or Subclass are herein referred to as the "Class."

235. Excluded from the Class are Defendants, including any entity or division in which Defendants have a controlling interest, along with their legal representatives, employees, officers, directors, assigns, heirs, successors, and wholly or partly owned subsidiaries or affiliates. Also excluded from the Class are any judicial officers presiding over this matter, members of their immediate family, members of their judicial staff, and any judge sitting in the presiding court system who may hear an appeal of any judgment entered.

236. Plaintiff reserves the right to amend the Class definition if discovery and further investigation reveal that the Class should be expanded, divided into subclasses, or modified in any

other way.

237. Plaintiff is a member of the Class, which satisfies the numerosity, commonality, typicality, adequacy, predominance, and superiority requirements of Rule 23(a) and (b)(3).

A. Numerosity

238. The number of impacted POTWs, upon information and belief, has reached the hundreds, and the number of POTWs that require wastewater monitoring is in the thousands. Thus, the members of the Class are so numerous that joinder of all members would be impracticable. Moreover, the precise number of Class members, together with their names and addresses, can be ascertained from EPA, through the public records, and/or through other appropriate discovery.

B. Commonality and Predominance

239. This action involves common questions of law or fact, which predominate over any questions affecting individual Class members, including:

- (a) whether Defendants engaged in the conduct alleged herein;
- (b) whether Defendants knew or should have known that their manufacture of AFFF/Component Products containing PFOA and PFOS was unreasonably dangerous;
- (c) whether Defendants knew or should have known that their AFFF/Component Products contained persistent, stable, and mobile chemicals that were likely to contaminate (1) surface and groundwater water supplies that are used for public water supply that ends up at wastewater plants and (2) POTWs, their effluent, biosolids, and other products, such as reuse water;
- (d) whether Defendants knew or should have known of the health and environmental harms caused by PFOA and PFOS in their AFFF/Component Products;
- (e) whether Defendants knew about the PFOA and PFOS contamination in the water around facilities that used and/or trained with AFFF/Component Products;

(f) whether the Defendants owed a duty to the Plaintiff and the Class members to warn users, Plaintiff, and Class members of the potential for harm that resulted from the foreseeable use of their products;

(g) whether Defendants failed to sufficiently warn users, Plaintiff, and Class members of the potential for harm that resulted from the foreseeable use of their products;

(h) whether the Defendants owed a duty to the Plaintiff and the Class to refrain from the actions that caused the contamination of the wastewater with PFOA and PFOS;

(i) whether Defendants made unlawful and misleading representations or material omissions with respect to the health and environmental impacts of PFOA and PFOS;

(j) whether Plaintiff and Class members are entitled to damages and other monetary relief, including, but not limited to, punitive damages, and if so, in what amount;

(k) whether Defendants should be required to abate the public nuisance their actions caused;

(l) whether Plaintiffs and the Class are entitled to equitable relief, including, but not limited to, injunctive relief and restitution; and

(m) whether Defendants are strictly liable to Plaintiff and the Class members for their actions.

240. The answers to these common questions will advance resolution of the litigation as to all Class members.

241. Defendants engaged in a common course of conduct giving rise to the legal rights sought to be enforced by Plaintiff individually and on behalf of the Class members. Similar or identical common law violations, business practices, and injuries are involved. Individual

questions, if any, pale by comparison, in both quantity and quality, to the numerous common questions that dominate this action.

C. Typicality

242. Plaintiff's claims are typical of the claims of the other Class members, because, among other things, Plaintiffs and the other Class members were injured through the substantially uniform misconduct by Defendants.

243. Furthermore, Plaintiff is advancing the same claims and legal theories on behalf of itself and all other Class members, and there are no defenses that are unique to Plaintiff. The claims of Plaintiff and those of other Class members arise from the same operative facts and are based on the same legal theories.

D. Adequacy

244. Plaintiff is an adequate representative of the Class because its interests do not conflict with the interests of the other Class members it seeks to represent. It has retained counsel competent and experienced in complex class action litigation, and Plaintiff will prosecute this action vigorously. The Class members' interests will be fairly and adequately protected by Plaintiff and its counsel.

E. Superiority

245. The class action mechanism is superior to any other available means of the fair and efficient adjudication of this case. Further, no unusual difficulties are likely to be encountered in the management of this class action. Given the number of POTWs impacted by Defendants' conduct and those that will require monitoring, it is impracticable for Plaintiff and the Class members to individually litigate their respective claims for Defendants' complained of conduct, as to do so would risk inconsistent or contradictory judgments and increase delays and expense to both parties and the court system. Therefore, the class action mechanism presents considerably

less management challenges and provides the efficiency of a single adjudication and comprehensive oversight by a single court.

F. Injunctive and Declaratory Relief

246. Further, Defendants have acted or refused to act on grounds generally applicable to the Class, and, accordingly, final injunctive or corresponding declaratory relief with regard to the members of the Class as a whole is appropriate under Rule 23(b)(2) of the Federal Rules of Civil Procedure.

G. Issue Certification

247. Likewise, particular issues are appropriate for certification under Rule 23(c)(4) because Plaintiff's claims present particular, common issues, the resolution of which would materially advance the resolution of this matter and the parties' interests therein. Such particular issues include, but are not limited to:

(a) whether Defendants knew, should have known, or recklessly disregarded that AFFF/Component Products containing PFAS posed environmental and health risks;

(b) whether Defendants knew or should have known that their AFFF/Component Products contaminated surface and/or ground water supplies;

(c) whether Defendants omitted, concealed, or failed to disclose the environmental and health risks posed by PFAS containing AFFF/Component Products;

(d) whether Defendants' conduct resulted in PFAS contamination to Plaintiff's surface and/or ground water;

(e) whether Defendants owed a duty to Plaintiff and the Class to refrain from the actions that caused the contamination of the wastewater with PFOA and PFOS;

(f) whether Defendants breached a duty owed to Plaintiff and the Class in their conduct that caused the contamination of the wastewater with PFOA and PFOS;

(g) whether the members of the Class have sustained damages caused by Defendants;

(h) whether Plaintiff and Class members are entitled to damages and other monetary relief, including, but not limited to, punitive damages, and if so, in what amount;

(i) whether Defendants substantially interfered with a public or common resource that endangered public property and/or the health, safety, and comfort of a considerable number of persons; and

(j) whether Defendants' actions created, contributed to, or maintained a public nuisance.

IX. CAUSES OF ACTION

COUNT I DEFECTIVE DESIGN (Against All Defendants)

248. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

249. As manufacturers of AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors, Defendants owed a duty to all persons whom their products might foreseeably harm, including Plaintiff and other Class members, not to market any product which is unreasonably dangerous in design for its reasonably anticipated use.

250. It is foreseeable that as a natural and probable consequence of AFFF/Component Products' designed use, structure, and indestructibility, that they would, through ordinary use of the products, reach groundwater, be washed into streams of water, and be discharged into POTWs that received that water after use as public water supply.

251. Defendants breached their duties owed to Plaintiff and Class members because Defendants' AFFF/Component Products were unreasonably dangerous for their reasonably anticipated uses for the following reasons:

- (a) PFAS cause extensive surface water, ground water, POTW, wastewater, reuse water, and biosolids contamination, even when used in a foreseeable and intended manner;
- (b) PFAS pose significant threats to public health; and
- (c) PFAS create real and potential environmental damage.

252. Defendants knew of these risks and failed to use reasonable care in the design of their AFFF/Component Products.

253. AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors pose a greater danger to the environment and to human health than would be expected by ordinary persons such as Plaintiff and other Class members and the general public.

254. At all times, Defendants were capable of making AFFF/Component Products that did not contain PFOS, PFOA, and/or their chemical precursors. Thus, reasonable alternative designs existed which were capable of preventing Plaintiff and other Class members' injuries.

255. The risks posed by AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors far outweigh the products' utility as a flame-control product.

256. The likelihood that Defendants' AFFF/Component Products would be spilled, discharged, disposed of, or released into the environment and contaminate Plaintiff and other Class members with PFAS far outweighed any burden on Defendants to adopt an alternative design, and outweighed the adverse effect, if any, of such alternative design on the utility of the product.

257. As a direct and proximate result of Defendants' unreasonably dangerous design, manufacture, and sale of AFFF/Component Products containing PFOS, PFOA, Plaintiff and other

Class members have been harmed by, and face the imminent, certainly impending, and substantially heightened risk of future harm related to, PFAS contamination. These damages include:

(a) costs and expenses related to investigation, sampling, testing, assessment, and reporting of the extent of PFAS contamination to Plaintiff and the Class, including wastewater, biosolids, and other related products such as reuse water, resulting from AFFF/Component Products;

(b) costs and expenses related to installation and maintenance of filtration systems to assess and evaluate PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(c) treatment and remediation costs for PFAS contaminated wastewater, biosolids, reuse water (and other products), and wastewater infrastructure to Plaintiff and Class members resulting from AFFF/Component Products;

(d) additional costs relating to infrastructure modifications and/or upgrades, including, but not limited to, design, construction, operation, and maintenance of systems related to PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(e) costs and expenses associated with obtaining new water sources and/or biosolids reuse/disposal stemming from PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products; and

(f) lost profits and opportunities to Plaintiff and Class members associated with biosolids and reuse water (among other products) contaminated with PFAS resulting from AFFF/Component Products.

258. Defendants knew that it was substantially certain that their acts and omissions described above would result in contamination to Plaintiff and other Class members. Defendants committed each of the above-described acts and omissions knowingly, willfully, and/or with fraud, oppression, or malice, and with conscious and/or reckless disregard for Plaintiff and other Class members' health, safety, and/or property rights.

**COUNT II
FAILURE TO WARN
(Against All Defendants)**

259. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

260. As manufacturers of AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors, Defendants had a duty to provide adequate warnings of the risks of these products to all persons whom its product might foreseeably harm, including Plaintiff and other Class members and the public.

261. It is foreseeable that as a natural and probable consequence of AFFF/Component Products' designed use, structure, and indestructibility, they would through ordinary use of the products, reach groundwater, be washed into streams of water, and be discharged into POTWs, thus causing harm.

262. Defendants breached their duties owed to Plaintiff and Class members because Defendants' AFFF/Component Products were unreasonably dangerous for their reasonably anticipated uses for the following reasons:

- (a) PFAS cause extensive surface water, ground water, POTW, wastewater, reuse water, and biosolids contamination, even when used in a foreseeable and intended manner;
- (b) PFAS pose significant threats to public health; and

(c) PFAS create real and potential environmental damage.

263. Defendants knew of the health and environmental risks associated with their AFFF/Component Products, and failed to provide a warning that would lead an ordinary reasonable user or handler of a product to contemplate the dangers associated with their products or an instruction that would have avoided Plaintiff and other Class members' injuries.

264. Despite Defendants' knowledge of the environmental and human health hazards associated with the use and/or disposal of their AFFF/Component Products into water supplies and directly into Plaintiff and Class Members' POTWs, including PFAS contamination of public wastewater and biosolid supplies, Defendants failed to issue any warnings, instructions, recalls, or advice regarding their AFFF/Component Products to Plaintiff, other Class members, governmental agencies or the public.

265. As a direct and proximate result of Defendants' failure to warn of the unreasonably dangerous nature of their AFFF/Component Products containing PFOS, PFOA, Plaintiff and other Class members have been harmed by, and face the imminent, certainly impending, and substantially heightened risk of future harm related to, PFAS contamination. These damages include:

(a) costs and expenses related to investigation, sampling, testing, assessment, and reporting of the extent of PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(b) costs and expenses related to installation and maintenance of filtration systems to assess and evaluate PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(c) treatment and remediation costs for PFAS contaminated wastewater, biosolids, reuse water (and other products), and wastewater infrastructure to Plaintiff and Class members resulting from AFFF/Component Products;

(d) additional costs relating to infrastructure modifications and/or upgrades, including, but not limited to, design, construction, operation, and maintenance of systems related to PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(e) costs and expenses associated with obtaining new water sources and/or biosolid reuse/disposal options stemming from PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products; and

(f) lost profits and opportunities to Plaintiff and Class members associated with biosolids and reuse water (among other products) contaminated with PFAS resulting from AFFF/Component Products.

266. Defendants knew that it was substantially certain that their acts and omissions described above would result in contamination to Plaintiff and other Class members. Defendants committed each of the above-described acts and omissions knowingly, willfully, and/or with fraud, oppression, or malice, and with conscious and/or reckless disregard for Plaintiff and other Class members' health, safety, and/or property rights.

**COUNT III
NEGLIGENCE
(Against All Defendants)**

267. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

268. As manufacturers of AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors, Defendants owed a duty to Plaintiff, other Class members and all

persons whom their products might foreseeably harm to exercise due care in the formulation, manufacture, sale, labeling, warning, and use of AFFF/Component Products.

269. Defendants owed a duty to Plaintiff and other Class members to act reasonably and not place inherently dangerous AFFF/Component Products into the marketplace when their release into the air, soil, and water was imminent and certain.

270. It is foreseeable that as a natural and probable consequence of AFFF/Component Products' designed use, structure, and indestructibility, they would through ordinary use of the products, reach groundwater, be washed into streams of water, and be discharged into POTWs, thus causing harm.

271. Defendants knew or should have known that PFAS were leaching from AFFF used for fire protection and response activities into the ground and surrounding waterways.

272. Defendants knew or should have known that PFAS are highly soluble in water, highly mobile, extremely persistent in the environment, and highly likely to contaminate wastewater and biosolid supplies if released into the environment.

273. Defendants knew or should have known that the manner in which they were designing, manufacturing, marketing, distributing, and selling their AFFF/Component Products would result in contamination to Plaintiff and other Class members.

274. Despite the fact that Defendants knew or should have known that PFAS are toxic, can contaminate water resources, and are carcinogenic, Defendants negligently:

(a) designed, manufactured, formulated, handled, labeled, instructed, controlled, marketed, promoted, and/or sold AFFF/Component Products containing PFOS, PFOA, and/or their chemical precursors;

(b) issued deficient instructions on how their AFFF/Component Products should be used and disposed of, thereby permitting PFAS to contaminate Plaintiff and other Class members' wastewater;

(c) failed to recall and/or warn the users of their AFFF/Component Products of the dangers of wastewater contamination as a result of standard use and disposal of their products;

(d) failed and refused to issue the appropriate warning and/or recalls to the users of their AFFF/Component Products; and

(e) failed to take reasonable, adequate, and sufficient steps or actions to eliminate, correct, or remedy any contamination after it occurred.

275. The magnitude of the burden on Defendants to guard against this foreseeable harm to Plaintiff and other Class members was minimal, as the practical consequences of placing this burden on Defendants amounted to a burden to provide adequate instructions, proper labeling, and sufficient warnings about their AFFF/Component Products.

276. As manufacturers, Defendants were in the best position to provide adequate instructions, proper labeling, and sufficient warnings about their AFFF/Component Products, and to take steps to eliminate, correct, or remedy any contamination they caused.

277. Defendants breached their duties owed to Plaintiff and Class members because they knew or should have known that the AFFF/Component Products they manufactured contained PFAS, which has resulted in contamination to Plaintiff and Class members.

278. As a direct and proximate result of Defendants' misconduct, Plaintiff and other Class members have been harmed by, and face the imminent, certainly impending, and substantially heightened risk of future harm related to, PFAS contamination. These damages include:

(a) costs and expenses related to investigation, sampling, testing, assessment, and reporting of the extent of PFAS contamination to Plaintiff and the Class resulting from AFFF/Component Products;

(b) costs and expenses related to installation and maintenance of filtration systems to assess and evaluate PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(c) treatment and remediation costs for PFAS contaminated wastewater, biosolids, reuse water (and other products), and wastewater infrastructure to Plaintiff and Class Members resulting from AFFF/Component Products;

(d) additional costs relating to infrastructure modifications and/or upgrades, including, but not limited to, design, construction, operation, and maintenance of systems related to PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(e) costs and expenses associated with obtaining new water sources and/or biosolid reuse/disposal options stemming from PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products; and

(f) lost profits and opportunities to Plaintiff and Class members associated with biosolids and reuse water (among other products) contaminated with PFAS resulting from AFFF/Component Products.

279. Defendants knew that it was substantially certain that their acts and omissions described above would contaminate Plaintiff's and other Class members' POTWs. Defendants committed each of the above-described acts and omissions knowingly, willfully, and/or with fraud, oppression, or malice, and with conscious and/or reckless disregard for Plaintiff and other Class members' health, safety, and/or property rights.

**COUNT IV
PUBLIC NUISANCE
(Against All Defendants)**

280. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

281. Plaintiff and other Class members are POTWs that provide services to residents and businesses in their vicinities.

282. Because Plaintiff and other Class members are POTWs, the water they treat flows to public water sources. Members of the public have a right to have their water supplies remain free of Defendants' toxic contamination.

283. Defendants' acts and omissions, including their manufacture, sale, supply, marketing, and defective design of and/or failure to warn regarding PFOA and/or PFOS in their AFFF/Component Products resulted in PFAS contamination to Plaintiff and Class members, and thus an unreasonable interference with Plaintiff's and Class members' use and enjoyment of property.

284. The impact of PFAS from AFFF/Component Products on human health and the environment are matters of substantial public interest and legitimate concern to Plaintiff and Class members.

285. Defendants' nuisance-creating conduct was intentional and unreasonable, violated legal requirements for the protection of others, and has substantially and unreasonably interfered with Plaintiff and Class members' ownership and/or possession, use, and enjoyment of their property. Defendants' conduct has affected and continues to substantially affect public health and the environment.

286. Defendants had control over their conduct which had an adverse effect on Plaintiff and Class members, and the public. Defendants had sufficient control over, and responsibility for, the public nuisance they created. Defendants were in control of the “instrumentality” of the nuisance, namely manufacture, distribution, sale, supply, and marketing of AFFF/Component Products.

287. The nuisance created by Defendants’ conduct is abatable.

288. This harm to public health, the environment, Plaintiff and Class members outweighs any social utility of Defendants’ wrongful conduct.

289. The rights, interests, and inconvenience to Plaintiff and Class members far outweigh the rights, interests, and inconvenience to Defendants, who have profited tremendously from their wrongful conduct.

290. Consequently, Defendants substantially and unreasonably interfered with and caused material damage and/or great annoyance to Plaintiff and Class members, endangering public property, as well as the health, safety, and comfort of a considerable number of persons. Such actions create, contribute to, or maintain a public nuisance, and injury is inevitable and undoubted.

291. As POTWs, Plaintiff and other Class members suffer injuries different in kind from the community at large because they rely upon their water production for their public service functions.

292. Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including PFOA and PFOS contamination to Plaintiff and other Class members. Defendants committed each of the above-described acts and omissions knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to

promote sales of AFFF/Component Products, in conscious disregard to the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare.

293. Therefore, Plaintiff and Class members request an Order providing for abatement and remediation of the public nuisance that Defendants have created, and enjoining Defendants from future violations.

294. Plaintiff and other Class members also request an award of punitive damages in an amount sufficient to punish these Defendants and that fairly reflects the aggravating circumstances alleged herein.

295. Defendants are jointly and severally liable for all such damages, and Plaintiff and other Class members are entitled to recover all such damages and other relief as set forth below.

COUNT V
PRIVATE NUISANCE
(Against All Defendants)

296. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

297. Plaintiff and other Class members are POTWs that provide wastewater services to their customers.

298. Defendants' intentional, negligent, and/or reckless conduct, as alleged herein, has resulted in substantial contamination to Plaintiff and other Class members with PFOA and PFOS from their AFFF/Component Products, human carcinogens that cause adverse environmental and health effects.

299. Defendants' manufacture, distribution, sale, supply, and marketing of AFFF/Component Products containing PFOA/PFOS were unreasonable because Defendants had knowledge of PFOA's and PFOS's unique and dangerous chemical properties and knew that

contamination of wastewater treatment plants was substantially certain to occur, but failed to provide adequate warnings of or take any other precautionary measures to mitigate those hazards.

300. The contamination caused, contributed to, and/or maintained by Defendants has substantially and unreasonably interfered with Plaintiff and other Class members' property rights.

301. Each Defendant has caused, contributed to, and/or maintained such nuisance, and is a substantial contributor to such nuisance.

302. Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including PFOA and PFOS contamination to Plaintiff and other Class members. Defendants committed each of the above-described acts and omissions knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of AFFF/Component Products, in conscious disregard to the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare.

303. As a direct and proximate result of Defendants' acts and omissions as alleged herein, Plaintiff and other Class members have and will incur damages related to PFOA and PFOS contamination in an amount to be proved at trial.

304. Therefore, Plaintiff and Class members request an Order providing for abatement and remediation of the private nuisance that Defendants have created, and enjoining Defendants from future violations.

305. Plaintiff and other Class members also request an award of punitive damages in an amount sufficient to punish these Defendants and that fairly reflects the aggravating circumstances alleged herein.

306. Defendants are jointly and severally liable for all such damages, and Plaintiff and other Class members are entitled to recover all such damages and other relief as set forth below.

**COUNT VI
TRESPASS
(Against All Defendants)**

307. Plaintiff and other Class members adopt, reallege, and incorporate the allegations in paragraphs 1 through 231 above, and further allege the following:

308. Plaintiff and other Class members are the owners, operators, and/or actual possessors of real property and improvements used for treating wastewater and discharging and/or reusing wastewater and biosolids.

309. Defendants designed, manufactured, distributed, marketed, and sold AFFF/Component Products with the actual knowledge and/or substantial certainty that they would, through normal use, release PFAS that would migrate into surface and ground water, and be discharged directly into Plaintiff and Class Members' POTWs ending up in their wastewater, reuse water (and other products) and biosolids, causing contamination.

310. Defendants negligently, recklessly, and/or intentionally designed, manufactured, distributed, marketed, and sold AFFF/Component Products in a manner that caused PFAS contamination to Plaintiff and other Class members.

311. As a direct and proximate result of Defendants' trespass, Plaintiff and other Class members have suffered and continue to suffer property damage requiring investigation, assessment, modification, remediation, and monitoring costs.

312. Defendants knew that it was substantially certain that their acts and omissions described above would threaten public health and cause extensive contamination of property, including POTWs, wastewater, biosolids, and reuse water. Defendants committed each of the above-described acts and omissions knowingly, willfully, and/or with fraud, oppression, or malice,

and with conscious and/or reckless disregard for the health and safety of others, and for Plaintiff and other Class members' property rights.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff on behalf of itself and other Class members, demands judgment against Defendants, and each of them, jointly and severally, and requests the following relief from the Court:

(a) an Order that Defendants acted with negligence, gross negligence, and/or willful, wanton, and careless disregard for the health, safety of Plaintiff and the Class;

(b) an Order that Defendants' conduct alleged herein constitutes a public nuisance;

(c) compensatory damages for past, present, and future damages, according to proof including, but not limited to:

(i) costs and expenses related to investigation, sampling, testing, assessment, and reporting of the extent of PFAS contamination to Plaintiff and the Class resulting from AFFF/Component Products;

(ii) costs and expenses related to installation and maintenance of filtration systems to assess and evaluate PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(iii) treatment and remediation costs for PFAS contaminated POTWs, wastewater, biosolids and related products (such as reuse water) to Plaintiff and Class members resulting from AFFF/Component Products;

(iv) additional costs relating to infrastructure modifications and/or upgrades, including, but not limited to, design, construction, operation and maintenance of systems

related to PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products;

(v) costs and expenses associated with obtaining new water sources and/or biosolid disposal/reuse options stemming from PFAS contamination to Plaintiff and Class members resulting from AFFF/Component Products; and

(vi) lost profits and opportunities to Plaintiff and Class members associated with biosolids, wastewater, reuse water (and other products) contaminated with PFAS resulting from AFFF/Component Products.

(d) equitable or injunctive relief based on the imminent and substantial endangerment to Plaintiff and the Class;

(e) an Order finding that Defendants are jointly and severally liable;

(f) an Order requiring Defendants to abate the public nuisance described herein;

(g) an Order for an award of attorneys' fees and costs, as provided by law;

(h) pre-judgment and post-judgment interest as provided by law;

(i) an award of punitive damages in an amount sufficient to deter Defendants' similar wrongful conduct in the future; and

(j) an Order for all such other relief the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff on behalf of itself and the Class, demands a trial by jury of all issues so triable as a matter of right.

Respectfully submitted,

DATED: March 16, 2023

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